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Computer Weekly

Thursday, March 15, 1984



Dogmersfield Park... Home of the new Amdahl Euro headquarters.

Amdahl buys stately home

by Keith Holder
LEADING US plug-compatible manufacturer Amdahl is moving to a stately home to pull its staff together in a new European headquarters in Britain.

It has acquired Dogmersfield Park in Hampshire, which will initially provide 38,000 square feet of space to be used as its administrative and training centre, at a cost of £6 million.

The move is necessary, says a spokesman, because the company's level of European business is growing significantly, requiring a larger centre for operations.

The decision to buy an existing property was made so that the operation could be completed

quickly, he adds.

The previous headquarters was nominally based in London, though because of its size, certain functions were devolved to other main offices in Europe.

Despite the move away from London, the company is confident that it has good access to Heathrow Airport and the UK motorway network.

No plans have been finalised for additional staff recruitment, and it is hoped that most of the existing staff will transfer.

Barrie Munn, managing director of Sherfield (Incomings), which negotiated the sale, says that the conversion is probably the first to be carried out according to the recommendations of a recent report on design of buildings for the high technology industry.

Apple fires vice-president Kvamme

by Dave Madden
APPLE is dropping Floyd Kvamme, its vice-president of marketing and the man brought in to set up its marketing division just 14 months ago.

Kvamme, who joined Apple in January 1983 from Nilsen's National Advanced Systems, is expected to leave the company tomorrow.

His responsibilities will be divided between the company's existing US vice-president, sales, and vice-president, distribution, and the vice-presidents for Europe, the Americas, and the Far East.

Kvamme is moving into the venture capital business. He plans to set up as coach, or troubleshooter, for young high technology companies.

He will be staying in California, but will not reveal which venture

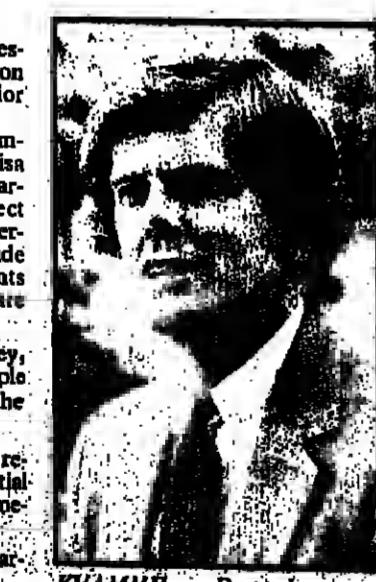
capital outfit he will be joining. Meanwhile, disaffected investors have brought a class action suit against Apple and its senior executives.

The suit alleges that the company's officials knew that Lisa faced both technical and marketing problems, that the project would ruin Apple's financial performance during 1983, and made deliberately optimistic statements in order to safeguard Apple's share price.

Steve Jobs and John Sculley, chairman and president of Apple respectively, are both named in the suit.

Apple says that it was still reviewing the case, but that its initial response is that it "is without merit."

No date has been set for a hearing.



KVAMME... Dropped.

Dealers lodge official complaints against ACT

by John Riley
IN THE wake of the Office of Fair Trading's finding last week that Apple was attempting to maintain retail prices, two dealers have lodged similar complaints against Applied Computer Techniques (ACT).

One of the complainants, Victoria-based C/WP Computers, placed the original complaint against Apple. The other complainant, Windsor-based dealer KGB Micros, wants to lower the retail price of the machines by up to 25%; but wants written assurances that ACT will not stop supplying the machines if they do.

C/WP Computer, an IBM PC dealer, applied to become an ACT dealer last year, but was turned down this January. Robin Addis, a co-director, believes that the reason was that ACT feared that ACT would advertise its machines at a discount.

"People assumed that our disagreement with Apple was because we were a troublesome dealer, and because Apple was breaking the law," says Addis. "We applied to become dealers, and at the time it indicated it would allow us to do so at a discount."

"ACT wants to protect smaller dealers to make sure that ignorant computer users get protection. But that doesn't make any difference to those dealers that won't supply support — they'll still take their profit," he says.

David (Sandy) Saunders, managing director of KGB Micros, says that he made a formal com-

plaint to the Office of Fair Trading just before Christmas.

Saunders alleges that ACT attempted to maintain retail prices, although verbally and not in writing. "The problem is that ACT, unlike IBM, makes no effort to specify what a dealer can do."

He says, adding that this has resulted in a large number of ACT dealers.

"ACT wants to protect smaller dealers to make sure that ignorant computer users get protection. But that doesn't make any difference to those dealers that won't supply support — they'll still take their profit," he says.

John Lettich, ACT's managing director, comments: "As yet, we have not received any official notification from the Office of Fair Trading. ACT has never terminated a dealer agreement over pricing."

"Discounting is normally a catalyst that leads to poor end-user support, and our policy is to ensure that the user has the highest level of support."

He adds that ACT always responds to user complaints. "The Office of Fair Trading's findings confirm that both KGB Micros and C/WP Computers have lodged complaints."

ACT was Vizion-light front page.

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Computer Systems

Thursday, March 22, 1984 Number 903 35p

Trilogy returns to drawing board

by Dave Madden

'GENE Amdahl's attempt to leap-frog IBM and the rest of the mainframe world with the Trilogy supercomputer based on its proton semiconductor technology seems to have failed.

Trilogy has been forced to redesign the processor which was to form the basis of its machines, and go for a down-graded version of the technology to "reduce the technical risks" associated with the project.

The company is delaying the proposed introduction of the Supercomputer until the middle of next year.

A spokesman for Trilogy has conceded that the initial project has been "too ambitious in some respects", and explains that "we have had to standardise our design options".

In effect, the company has simplified the design process of its wafer scale integration semiconductors. Although the company says that this will make subsequent development stages easier, it will result in slower processor speeds, and "inferior performance than we originally envisaged".

As a consequence of the simplification, Trilogy has decided to drop the single CPU version of the IBM-compatible machine. It will now offer a dual processor as standard. The upgrade will be a four-processor version, an option that was not possible under the previous design.

The company claims that the dual processor version of the system will operate at about three times the power of an IBM 3081K mainframe. The more ambitious single processor design had been promised at four times the power of an IBM 3083J machine.

Retailers plead for piracy suit cash

by John Kavanagh

THE UK Computer Retailers Association is trying to drum up industry backing for a software piracy lawsuit which, it believes, could set a legal precedent for future cases.

The case is being brought against a public body by Kima Computers, a small firm in Pangbourne, Berkshire. The Association has been collecting details of possible piracy lawsuits and says it has a "clear cut" case with this one.

It is now trying to raise between £8,000 and £10,000 from its mem-

bers — an average of £250 each — and hopes to get trade associations and others together in April to ask them to contribute.

Paul Rayner, chairman of the Computing Services Association (CSA), says: "The Retailers Association's proposed £10,000 won't buy many days of legal advice."

Paul Rayner, chairman of the CSA, says: "The Retailers Association's proposed £10,000 won't buy many days of legal advice."

Even IBM admits that it has handled the affair badly.

A spokesman says: "It is very embarrassing, but we are not alone in facing a component shortage." On a more optimistic note, he adds:

"We expect this to be a temporary problem and we are confident that we will meet our production targets for the year."

IBM clamps down on PC supplies

IBM has put the brakes on supplies of its Personal Computer and PCXT microcomputers.

A letter sent to all UK dealers on Monday states that they may now order only 25 machines per month because of a shortage of key components.

This contrasts with a statement made by IBM two weeks ago when it raised prices by up to 20% and said production at its Greenock facility had been successfully scaled up at the beginning of the year.

Richard Holway, marketing director of Hoskyns, one of the UK's largest suppliers of the IBM-PC, says that the price cuts followed by the shortage will lead to a large backlog of orders.

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Tebbit tosses £180 million to technology

by Dave Madden

GOVERNMENT funding for new technology has been increased by some £180 million. In a Commons statement on the final day of the Budget debate, Trade and Industry Secretary Norman Tebbit outlined the new measures:

- £120 million to continue the Microelectronics Industry Support Programme, now to be called MISP2, until 1990;

- £12 million to carry the Software Products Scheme through mid-1985. It has used the £25 million already allocated to it;

- £20 million for advanced manufacturing technology. An allocation of £35 million for the present Flexible Manufacturing System Scheme is close to being committed;

- Information technology centres to be increased from 150 to 175;

- Extension of the Design Advisory Service, with another £5 million already allocated to it; linked by two Mbit-second BT Megastream digital leased lines. It will switch data as well as voice telephone calls.

- The original funding for MISP, which was launched in 1978 to encourage the microelectronics manufacturing industry, is exhausted.

Information Technology Minister Kenneth Baker, who gave details of how the new money would be spent, said MISP will have supported 160 projects and stimulated investment of £270 million in 40 companies.

Baker said the new funding would develop production and use of microelectronic components, and underpin the Alvey and Esprit programmes.

More than half of MISP2 will finance industrial capacity to supply equipment used to make products using the Esprit technology.

Baker said the government is encouraged by the way the industry has responded to MISP. He claimed that the UK would

seem to have major export potential, and secondly, it will encourage development of software productivity tools.

Baker was pressed on the apparent paradox that MISP funds had gone to the likes of GEC, and Ferranti, while the government was now refusing Immos further funds.

He described this as unjust: "Immos has received £100 million from the government in loan and equity funds. It is now in a position to raise money in the private sector and I'm very confident it will do so soon."

Immos was welcome to apply for support under MISP2, he added.

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Machinery allowances phased out in Budget

by our Parliamentary Correspondent

THE main news of the week from Parliament for computer firms — and everyone else — was given by the Chancellor of the Exchequer, Nigel Lawson.

He announced the phased abolition of first-year capital allowances for plant and machinery, and provided one of the few unexpected surprises of the Budget speech.

The current 100% allowance in the first year for machinery and/or plant was cut from the day after the speech to 75% and is to drop to 50% for expenditure incurred on or after April 1, 1985.

Lawson says it will be wiped out for expenditure incurred on or after April 1, 1986.

For an analysis of this and other budget moves, see page 10.

The UK's autonomous islands, the Isle of Man and the Channel Islands, are likely to take steps to avoid becoming "data havens" after the passage of the Data Protection Bill.

David Waddington, junior Home Office Minister, told the Commons Standing Committee on the Bill that the Channel Islands is likely to take advantage of the provision in the Bill which allows its extension through an Order in Council to cover databases in the well known tax haven.

The Isle of Man has indicated its intention to introduce its own Data Protection Act and this will be closely modelled on the UK legislation.

Speaking in the Budget debate, the Chief Secretary to the Treasury, Peter Rees, revealed that the cable TV industry and the Inland Revenue had had talks on the tax treatment of the cost of providing the protective ducting in which the cable was inserted and the cost of cutting and covering the trenches in which it is laid.

After taking legal advice, Rees added, the Inland Revenue was informing the industry that such expenditure qualified for capital allowances.

Taken in conjunction with the announcements about phasing out capital allowances, the decision by the Inland Revenue would allow the industry to make its future plans in full knowledge of the tax



Japan bids to grab US software secrets

by John Kavanagh

ANGER is boiling up in the West over proposed changes to software copyright rules in Japan which will open up the secrets of US and European packages to Japanese firms.

The proposals have outraged the US Congress, and Vice-President George Bush has sent senior Commerce Department officials Clyde Prestowitz and James Murphy to Tokyo to voice the US government's objections.

The Commerce Department has also threatened reprisals if the proposals go through.

The laws are the work of Japan's Ministry of International Trade and Industry (MITI) which claims it is merely protecting users' interests and eliminating the risk of duplicated effort.

MITI wants to introduce 15-year patent-type protection for software in place of copyright which offers protection for 50 years. In addition, it wants software owners to register details of their packages to cut the duplication of development — and to give the registration body a copy of the source code to protect users if the suppliers go out of business.

The patent idea is rather hair-raising, says Fred Perkins, UK managing director of the multinational services group, I. P. Sharpe. "A lot of companies have had their fingers burned in the past by showing products to the Japanese and later finding those same products appearing in slightly modified form."

Close behind was the Conservative Lord Orr-Ewing, sponsor of the amendment, which has had several revisions to bring it in line with EEC regulations and the wider General Agreement on Tariffs and Trade (GATT).

And the Independent Lord

Waddington, managing director of GEC, said he welcomed the amendment because it understood it would enable the Secretary of State for Trade to ensure that the British telecommunications equipment manufacturing industry (of which GEC is one) was able to compete with foreign suppliers.

The amendment itself is in two parts and provides as positive duties for the Secretary of State for Trade and Industry that he enable persons producing telecommunications services in the UK to compete effectively, and do the same for those producing apparatus.

Macdonald-Smith admitted later: "The provisions of the amendment were already included in the Bill..."

But these were apparently rather vague.

The new phraseology, according to Orr-Ewing, means that "if we pin this down then anyone can draw attention to it if they are not doing it."

He hopes this will mean the UK industry gets the same sort of diplomatic and consular support overseas that the French give to their industry.

UK skilled labour and low pay attracts US firms

by John Kavanagh

THE UK is by far the favourite overseas factory location for US electronics firms, thanks mainly to the Conservative government and good labour relations.

So says UK research firm The Electronics Location File. In its 1984 survey*, nearly 40% of the 760 firms surveyed say they plan to set up plants outside the US in the next three years — and 28.5% of those companies have chosen or shortlisted the UK.

The UK has a skilled labour force, and wages are often less than in other European countries, says the report.

There follows a wide gap to the Irish Republic with 16.9%, and West Germany with 16.6%.

US firms particularly like Mar-

garet Thatcher's government. The UK's popularity took a slight knock in last year's survey with the prospect of Labour winning the election.

The main factor in the choice was the UK's good labour relations.

"While generally the US may seem unable to offer this, its electronics industry can and in fact has a very commendable industrial relations record," according to the report.

The UK has a skilled labour force, and wages are often less than in other European countries, says the report.

There follows a wide gap to the

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Acorn improves graphics

by Philip Hunter

ACORN Computer has unveiled its product strategy for the rest of this year, beginning with the launch last week of a second processor that boosts the graphics facilities of the BBC Micro Model.

The company has also promised another add-on processor within two months, a Zilog Z80 to enable the BBC Micro to run business software based on the CP/M operating system.

Both processors use Acorn's recently patented Tulle interface on the BBC Micro, a high-speed data channel which enables external processors to be closely coupled with the single central processor.

CP/M is now new to the BBC Micro, since Cambridge-based Torch already supplies a product that enables the machine to run CP/M-based programs. But the Torch product is based on a disc pack of twin floppies containing a Z80 board.

Acorn marketing manager Tom Hohenberg promises that all BBC Micro software will run unchanged on the CP/M version of the machine, and says that software compatibility will also be extended to the new Acorn Business Machine due for launch later this year.

Software compatibility will then be complete across the whole range of Acorn micros, from the £200



HOHENBERG . . . "We've followed the lines of existing machines."

Electron, up to the new business machine.

"Instead of expanding by bringing out a totally different operating system and non-compatible computers, we've tried to follow the lines of existing machines," says Hohenberg.

The new 6502 second processor

has 64K of user memory, and runs 50% faster than the existing central processor.

Acorn has also developed a Hi-Bus ROM chip with 44K of user memory. The idea is that this 44K is now freed for programs written in Basic, leaving 60K for assembly language programs.

User is the sales key, say experts

END-USER training is the key to most micro sales. That was the oft-repeated message from speakers at last week's Computer Trade Conference at Wembley.

Michael Milmat, managing director of Debenhams' subsidiary Greens Business Systems told delegates of the emphasis that his company places on training in order to retail to first-time users.

Greens offers a range of 28 training courses concentrating on specific hardware and software packages.

Whereas Greens is banking on volume sales to the 1.2 million small businesses employing less than 20 people, Planning Consultancy managing director Graham Summers is making a success of selling to large corporate users by fronting his micro sales with a range of courses.

His recent seminar programme,

which was given on the premises of the Institute of Directors, reached 2,500 executives. He outlined his various seminar techniques and maintained that the courses by themselves showed a profit.

He concluded: "The dealer may sell his company through many forms of education."

Russ Nathan, managing director of market research firm Romtec, presented some data on software markets. Bitslik, a software package from Lynx for architects, surveyors and engineers, is the biggest-selling package to micro users, according to Nathan.

The next two most popular applications are for hair and restaurants and for estate agents, both sold by Ormbeta Software.

Not surprisingly statistics compiled by Romtec show that Basic is the most popular language, followed by Cobol and Assembler.

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Intelligence boss denies rumours

by Claire Gooding

ASHLEY Ward, managing director of financial systems house Intelligence UK, has denied that the company is in trouble. The rumours started last week following the sudden departure of 12 employees — nearly a quarter of Intelligence's staff.

"We are actually growing at the rate of 120%," says Ward. "We have dropped the staff because we were simply too big. We misjudged the number of people we'd need to cope with the growth."

Intelligence has built its business on the Micromodeller financial forecasting package. It used the system to model its financial and growth pattern and axed the extra staff when it became clear that Intelligence could not afford to carry them.

The Daily Telegraph reported last week that Intelligence had dismissed the 12 abruptly and sent them home by cab the same day.

"There were bound to be rumours of liquidation," says Ward. "In fact most of the rumours come from jealousy at our success. The truth is we are doing well. Even if we were in trouble we have major investors who wouldn't let their investment go."

The National Coal Board Pension Fund put £1.1 million into Intelligence last year. The company is quoted on the "over the counter" 163 Stock Exchange, and is currently valued at £4 million.

According to Ward, the dismissed staff were the less skilled and more junior people, largely inexperienced programmers and unqualified engineers. He says there is "a good atmosphere" among the remaining 38 staff at Intelligence.

Deputy managing director, Richard Harris, stresses that research and development remain top priority, and confirms that the

entire Intelligence product line is still fully supported.

Intelligence faced much user criticism last year for not supplying updated versions of Micromodeller, and the user group is still seeking clarification of Intelligence's intentions on support.

The user group, the Business Micro User's Association, has recently been expanded from pure Micromodeller interests to include users of other systems. Intelligence itself has faced fierce competition from a plethora of modelling products, including the updated US "original" of its own system sold by rival firm Dataflex, which was set up by ex-Intelligence staff.

"The competition doesn't bother us," says Harris. "We are moving out of their level anyway. It was a matter of generating enough profits to fund future development. Although we were exceeding revenue targets, we had too many people for the level of growth."



WARD... "We are actually growing at a rate of 120%."

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To be held at the Hotel Erice, Nijmegen, The Netherlands and at the Faculty of Science, University of Nijmegen, The Netherlands.

16th — 18th April 1984

The European UNIX Systems User Group (EUUG) is to hold its 1984 SPRING CONFERENCE in The Netherlands. The event will feature informative TECHNICAL SESSIONS covering current UNIX developments in graphics, text processing, networking, distributed UNIX systems, programming environments such as SMALLTALK and PROLOG, editing environments such as EMACS, and database management. Amongst the personalities in the UNIX field who have been invited to speak at the Conference are BRIAN KERNIGHAN (Bell Laboratories, USA); ERIC ALLMAN (Britton-Lee, USA); BRIAN REOMAN (Bell Telephone Laboratories, USA); and LARRY CRUME (AT&T, USA).

TUTORIAL SESSIONS will cover advanced editing, advanced shell programming, advanced text processing, the C programming language, UNIX networking, 4.2BSD/UNIX, the UNIX market situation, and AT&T licensing.

Running concurrently with the Conference will be an EXHIBITION at which most of the major UNIX vendors in Europe and the USA will be represented.

Further details and application details concerning this important UNIX event are available from:

The Secretariat, EUUG, Owles Hall, Buntingford, Hertfordshire SG9 9PL, England. Telephone: Royston (0763) 73039

Pundits want an SNA Euro standard

by John Riley

THE European Commission is ducking the real long term solution for a networking standard, say consultants from the Yankee Group. It should wake up to the demands of suppliers to use IBM's SNA networking protocols as the basis for a standard.

According to Al Dunn, the Yankee Group's European director, the question is not whether Europe should go for SNA — which most large companies already use anyway — but "how much of the standard that they can persuade IBM to open up."

Dunn is optimistic that IBM would open up SNA if looked like becoming a de jure standard.

Dunn and his colleague Don Tombs have had extensive meetings throughout Europe recently with suppliers, PTTs and the European Commission.

Both Dunn and Tombs believe that the International Telegraph and Telephone Consultative Committee (CCITT) which meets to set up communications standards "won't get Levels 6 and 7 of the International Standards Organisation (ISO) model right". They see the committee standards going the

same way as telex standards where "the protocols were interpreted differently in each country".

"CCITT by the year 2000 will have less importance in terms of office automation standards, by which I mean administrative support systems, and not transaction processing, than IBM," says Tombs.

"European suppliers want to go for DIA/DCA and that is a difficult pill to swallow," he adds. DIA/DCA is the more complex set of protocols.

Dunn and Tombs argue that the national PTTs are split over the question, while suppliers want to use SNA as a standard.

Pirate solution is near

by John Kavanagh

LEADING UK computing firms and government agencies have agreed on the design of a device aimed at becoming a world standard solution to the software piracy problem.

The government's British Technology Group and National Physical Laboratory are now putting together a full prototype specification. These two organisations are part of a consortium including 10 companies led by ICL and some big software firms, which are backing the project to the tune of £5,000 each.

The consortium approved the outline design at its last meeting and will meet early in May to sign off the detailed specification.

Companies will probably then be invited to bid for the manufacturing rights to the device. The consortium believes the device could be sold for around £50.

The device is a temper-proof box of electronics which deciphers

Learn more about robot skills

by John Riley

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Cullinet sales break million barrier

CULLINET Software's UK sales passed £1 million for the three months ending January 31, 1984, 139% up on the same period last year. UK managing director Vic Morris says that increased sales of integrated manufacturing and financial software packages were largely responsible for the growth.

US sales were up from \$20.1 million to \$31.3 million for the same quarter, and profits jumped 40% to \$4.23 million.

Package spreads

PACKAGE PROGRAMS has spread its net to the Middle East with a new office in Bahrain. The company has been operating in the Middle East since 1978 and has over 40 packages installed in major organisations in Bahrain, Kuwait, Abu Dhabi, Qatar and Saudi Arabia. Prudence Jazayeri will head the Bahrain office, recruiting local staff, with senior support coming from the company's London office.

Micropro move

MICROPRO, the Californian developer of the successful Wardstar word processing package, is to try to break into the competitive financial spreadsheet market. The \$50 million turnover firm is launching a new product called Planstar which goes into sale at the end of this month, running under both CPM and PC-DOS.

Duquesne here

DUQUESNE Systems, Pennsylvania owner of IBM mainframe systems products such as QCM and SDSI, has set up a UK office in Croydon. The firm, which went public in January, counts ICI, Masey-Ferguson and National Westminster and Barclays banks among its users. It turned over nearly \$3 million in 1983.

Decus meeting

THE head of the government's information technology standards work, Keith Bartlett, will address Digital Equipment users at the annual conference of Decus next month. His appearance comes as the government is sliming to overturn its own internal communications to bring them in line with international standards. The UK arm of Decus has 6,000 members.

Floyd wasn't fired

FLOYD Kvamme resigned from his post as executive vice president for sales and marketing at Apple Computer, and was not fired as stated in last week's issue. He is moving to an as yet unspecified California venture capital outfit, and will not be directly replaced at Apple.

Storage launches optical system

by Keith Helder

US PERIPHERALS manufacturer Storage Technology has launched its large capacity optical disc storage system Europe, the first of a family scheduled to appear over the next two years. It is ready to take orders now, for delivery in the fourth quarter.

The 7600 uses an interchangeable 14 inch disc, and is capable of storing four gigabytes (million bytes) of computer data, graphics, diagrams or other image data, like X-ray films.

Gene DeKoster, the company's vice president for optical products, says that this is equivalent to 100 million typed sheets of A4-sized paper, 40 reels of magnetic tape or the contents of 1½ IBM 3380 magnetic discs.

He says that the market for write-once disc systems of this size is enormous, and estimates that shipments this year will exceed 500 units, followed by 6,500 sales in 1985. If true, this would be worth \$70 million respectively.

DeKoster estimates that main market for these systems will be in areas where the residual value of information increases with time.

One system has already been

installed in the US, at the World Weather Centre in Colorado, which will use the system to record weather patterns.

This is acting as an alpha test site, though beta testing is due to start in April and customer shipments to Europe are scheduled for the beginning of the fourth quarter.

DeKoster says that he does not see the new optical media as competition for conventional magnetic discs, but sees it replacing paper, microfilm and other photographic media as a form of mass data storage.

The actual disc uses changes in refractive index, rather than laser etching in record data. This allows an inbuilt verification subsystem to check the data for accuracy and burn it out if it is incorrect.

The company quotes a bit error rate of one wrong bit in 10 discs. Prices for the 7440 optical disc will be around \$200, and the 7600 unit will cost \$140,000.

DeKoster says he expects the price to fall once the systems start to sell in quantity giving a cost per Mbbyte below 30 US cents over the next two years.



POTTER . . . Says he will not abandon games market.

ICL man calls for standards debate

by Philip Hunter

A CALL for a public debate on computer and telecommunications standards was made last week by ICL's technical director, Mike Watson, during a lecture at London's Queen Mary College.

"The emphasis now should be on developing standards for the basic infrastructure of the computer industry," said Watson. "Previously standards have been private to companies or sectors of the industry."

The work should be controlled, however, because bad standards can inhibit progress, Watson stressed. "There is still the risk that we will standardise too early."

Watson admitted that there is the possibility that standards would inhibit progress towards products the user needs, if they are ill-conceived and too hastily implemented.

Watson lamented the lack of UK activity in the semiconductor market. "It is an unmitigated tragedy that there is not a healthy UK semiconductor industry," he said.

Watson admitted that it was difficult for a country of the UK's



WATSON . . . Admits danger.

Prime buys control package

by Andrew Thomas

PRIME has taken a further step towards offering an integrated CAD/CAM package with the purchase of the rights to a numerical control package from CADCentre.

The US minimechanics this week acquired non-exclusive worldwide marketing rights to the GNC package which is in use at 180 sites throughout the world.

Two weeks ago Prime bought a version of Cambridge Interactive Systems' Medusa solid modelling package for an undisclosed but "substantial" sum, following the earlier purchase of the Locam process planning product from Maidenhead-based Logan Associates.

Prime already owns the rights to a number of CADCentre products, including the best-selling PDMS plant design system, following its takeover of Stevenage software house Compedit in 1982, and plans to integrate all its acquisitions into a unified CAD/CAM system.

The company declines to comment on either the price paid for GNC or on its plans for further purchases.

Psion is game for some business software

by Keith Helder

A £10 MILLION UK computer games company is making the switch to business software.

Psion has a contract to provide the bundled applications suite for the Sinclair QL microcomputer, though founder and managing director, David Potter, says the company will not abandon its games market.

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BUDGET ANALYSIS



Lawson pleases and confuses

Dave Madden assesses how the Budget affects the computer industry

IS it the Budget for "enterprise", as Chancellor of Exchequer Nigel Lawson, had it, or "irrelevant and deflationary", as alleged by the shadow chancellor, Roy Hattersley?

As far as the computer industry is concerned, it has proved something of a curate's egg.

First, the surprise. A dismayed managing director of a Lancashire textile firm charged Lawson, in a post-mortem on Radio Four's *Today Programme*, with "caring nothing for traditional manufacturing industry", and having a prejudice in favour of "the new service industries".

Yet any mention of information technology was conspicuously absent from Lawson's remarks, and from the financial statement that accompanied his speech.

"A very good Budget for a lot of service companies – almost all the measures are favourable" – Eycions

THE BLEASDALE CHALLENGE



Eddie Bleasdale, Managing Director of Bleasdale Computer Systems plc.

"I challenge you to show me a UNIX® computer that can match the Bleasdale for price, performance and back-up support!"**

With so much attention being focused on UNIX these days, the air is getting thicker by the day with claims and counter-claims about the superiority of this system or that.

So in the interests of settling the record straight, let's establish a couple of facts.

One: In its class, no other UNIX system in the UK can touch the Bleasdale for speed and processing power. Ring us and we'll give you the full details. The results may well surprise you. (And embarrass some of our competitors.)

Two: no other UNIX computer in the UK can boast better all-round support than the Bleasdale. As a British-based systems designer and manufacturer, we can customise and

maintain your machine, as well as upgrade it to take advantage of new developments as they occur. We have UNIX systems experts at the end of a phone to deal with queries on-the-spot. Just as importantly, as the longest-established UNIX® company in the UK, we've built up a library of proven, state-of-the-art software packages for every application from word processing and database management to graphics and CAD/CAM.

With these few facts in mind, take a look around. We think you'll find the air rather clearer than before.

To find out more about the Bleasdale, call Peter Hollands on 01-828 6661 or 828 4062. Or return the coupon.

I would like to know more about the Bleasdale range of UNIX computers.

Name _____

Address _____

Position _____

I am interested in the Bleasdale for scientific use, office applications, as an OEM.

Will East Germans pay one-and-a-half times their monthly salary for a home computer? John Kavanagh reports

Iron Curtain countries unveil their first home computers

EAST Germans were introduced to home computers at the Leipzig Fair last week when their country's two main computer and electronics organisations launched eight-bit machines costing more than one-and-a-half times the average monthly salary.

The machines, from Robotron and Mikroelektronik, are based on the latter's U880 processor chip, which is compatible with Zilog's ancient Z80. Mikroelektronik claims that its home computer can address up to eight megabytes of memory directly. It has patented the addressing method and is tight-lined about it.

Robotron's Z9001 costs £400 for a 16K system with no software and excluding the television display. The average monthly wage in East Germany is around £250. Highly qualified people such as university medical school lecturers earn around £370.

"The Z9001 is not expensive and the price is acceptable," said sales executive Klaus Lorenz. "There will be no problems selling it."

He says Robotron will build anything between 100 and 1,000 in the first year, but after that sales will move quickly into thousands a year, boosted by the East German government's plan to put microcomputers in schools. Certainly there was huge interest from East Germans at the Leipzig exhibition.

The processor and keyboard are contained in one unit, which can be attached to a standard television set. It displays 24 lines of 40 characters to provide crude, viewdata-type colour graphics.

The memory can go up to 64K. Cassette tape and floppy disc interfaces are available but not communications. There are plans for a printer for October, when the Z9001 will appear on sale in high street shops.

Little software is available. It includes an 8K Basic interpreter, supplied on cassette tape or as a plug-in module, plus an assembly language. There is also a package to teach users how to operate the machine and how to program in Basic.

Robotron expects to have 70 programs ready by October. It insists the operating system is not similar to Digital Research's CP/M, which became virtually the

standard Z80 microcomputer operating system in the early days.

Lorenz said Robotron would not try to sell the machine in the West. "We have a huge need for consumer goods and we will manufacture for that need," he said.

"Besides, western markets are already full."

The Mikroelektronik HC900 home computer also plugs into a colour television. It costs around 10% more than Robotron's machine. It will be sold through RFT shops, which sell televisions, radios, tape recorders and so on.

The HC900 processor is in a box measuring 10 inches by 11 by three inches deep. The keyboard is connected to it by a five-metre cable.

Memory starts at 32K and be built up in 64K chunks — each in a

"We have a huge need for consumer goods and we will manufacture that need!"

similar box to the processor — to eight megabytes.

Development engineer Uwe Buckner said the eight-bit processor could address the eight megabytes in microseconds, without using peripherals.

A cassette player, light pen and joystick are the only peripherals available now. Plans include floppy discs, speech output and analogue-to-digital converters. The HC900 can already produce five octaves of music.

Videoton, probably the most outward-looking of the east European computing organisations, hopes to sell its system in the West. It costs £120,000. The company, turning to OEM deals, has also signed with Perkin-Elmer for the word processor to be supplied on its hardware.

Videoton offers Hungarian-built peripherals with the SLK-80, including 3.25-inch floppy disc drives with capacities of 200,000 characters.

Again Basic, an assembly language and an operating system — Mikroelektronik's own — are available. Buckner said extended Basic and the Logo learning language would be provided later.

Both organisations see the home market as the main one in a country where consumer durables are in short supply.

Mikroelektronik also introduced what it claimed was a world first. Its Quantizing Processing Computer is a microcomputer which converts measurement units from one to another and does calculations on them.

For example, if a user wants to add three metres and four inches together the machine converts the

slopes, serial, parallel and modem interfaces are available. Programming is in Basic and assembly language. Pascal is on the way.

The machine will be aimed at the office and industrial markets rather than the home.

Meanwhile the Czech organisation, Kovo, launched a minicomputer compatible with Digital Equipment's PDP-11/60, another western machine which is getting on in years.

The CM1403 is made from processor components and 16K memory chips built in Czechoslovakia.

It can support 25-megabyte disc drives and five-megabyte cartridge disc units, all from Bulgaria.

Two Bulgarian tape units with densities of 800 bits per inch were also announced. Next year Kovo will introduce its own 12-megabyte cartridges.

"The discs are getting better — but they are not up to DEC's standard," said a Kovo representative.

He said the machine was 100% compatible with the PDP-11. It runs operating systems similar to DEC's RSX-11M and RT-11 and there are links for DEC's Decnet. The Czechs are working on a machine which will be compatible with the 32-bit DEC Vax.

Elsewhere Robotron saw on the last of its paper tape-based office

systems with the launch of the K1715 office computer and accounting system.

It again features the U880 processor — this time with an operating system compatible with CP/M, giving users access to 4,000 odd applications packages believed to be available for that system.

The K1715 also has 5.25-inch floppy discs with capacities of 120,000 characters, plus communications.

Robotron expects to export the machine to the West, where it has had some success with its earlier office systems.

Robotron's main emphasis is on turnkey systems based largely on its own DEC-compatible minicomputers.

He said the main application was the extension or construction of scientific and technical calculators and desk-top computers and related products in measurement and control.

Lists of Leipzig Fair visitors, displayed publicly, included officials from Cuba, Latin America, Africa and the Middle East, including the Palestine Liberation Organisation.

Rudiger Sobe, director of Robotron Export-Import, said the organisation exported over 70% of its production, almost all to "socialist" countries. A recent contract with the Soviet Union, worth £45 million, involved over 100 big mainframes in the next year.

The Soviet Union is said to produce the biggest mainframe in the IBM-compatible Eastern European range.

Videoton offers Hungarian-built peripherals with the SLK-80, including 3.25-inch floppy disc drives with capacities of 200,000 characters.

The system can support four drives. There are eight expansion



The Soviet Union dominates Leipzig with its own building.



SPITZNER ... "And this is the fourth breakthrough."

18.3.84 (13) 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 889, 890, 891, 892, 893, 894,

Timex spreads its wings even wider

by Nuala Moran
SCOTTISH subcontractor Timex is spreading its net. It is best known for building Sinclair's ZX81 and Spectrum micros, but now plans to add further Sinclair machines and electronics products for other companies.

Last week it announced that it will start making the Sinclair Microdrive at its Dundee factory later this month, and managing director Barrie Lawson says that Timex will be moving to other markets including telecommunications and computer peripherals to widen the company's base. He claims that Timex is on the verge of securing three contracts worth several million pounds in these areas.

Timex also expects to be making Sinclair QLs later this year. But it is not sorry that Thorn was Sinclair's first subcontractor. "In working with Sinclair it is in our advantage to have volume rather

than the problems of new products. We have got the better part of the deal at the moment because the Spectrum is the bread and butter," he remarks.

"Demand for the Spectrum in 1984 has held up in the pre-Christmas level which is almost unheard of in the UK. At the moment we are producing as many Spectrums as we can."

The one millionth Spectrum came out of the factory last November and Lawson says Timex is on the way to the next million.

But Lawson also warns that Sinclair had had problems with chips and this had held back production. He believes "we could have made about 20% more than we did if we had more parts. And Sinclair could have sold them."

Timex is also producing the cathode ray tube for the Sinclair flat screen television. Lawson denies problems at the factory held up Sinclair's production. "We've given

Timex now wants to recruit engineers and technicians to expand research and development efforts.

Taiwan business comes to UK

TAIWAN-based multinational Tatung has brought its PC2000 business micro to the UK. The Taiwan built eight-bit machine — which uses a Z80A processor — is the first microcomputer Tatung is selling here.

But the company's UK factory in Bridgnorth, Shropshire, already manufactures monitors, and a home micro to be launched next

month will be built there. The Bridgnorth plant was taken over from Decca three years ago.

The PC2000 weighs in at £1,699 for a system with twin floppy drives, black and white monitor and keyboard. Options include eight-inch floppies, hard discs and colour.

A "Software Bundle" comes with the computer, and includes general business accounting software.

The machine runs under the CP/M operating system, and there are over 300 Tatung-approved packages available.

Tatung was founded in 1918, and builds products ranging from robots and automated production lines to colour televisions and audio equipment.

Shirley... Wanted to inject humour.



SHIRLEY... Wanted to inject humour.

Enterprise is delayed

by Philip Hunter

DB DEVELOPMENT of the "Enterprise" home computer, to be made in the UK and due originally for launch this spring, has been delayed while the manufacturer has been sorting out what to call it.

The machine will not now appear in the shops until the autumn, and at a slightly higher price, £1,99 plus VAT, rather than £1,99 inclusive of VAT as promised.

The maker of the machine had tried last summer to register under the name "Elan", but an injunction was served by Elan Digital Systems, a UK maker of EPROM programmers, to prevent the use of the name.

The machines will initially be made by Welwyn Electronics, although Shirley says that the company will be looking for two or three other manufacturers as well if demand is as great as hoped for.

Zilog also markets the 8000 models through OEMs including sister company Exxon Office Systems, CAP and Computerplan.

The company took the temporary name "Plan", trying in the words of marketing director Mike Shirley to "inject a little humour into the situation." But now the company has managed to register under the same name as its product: "Enterprise Computers."

Two models will be launched, one with 64K memory, the other 128K, and the plan is to offer the Sony 3½-inch microfloppy drive.

The machines will be made especially at fledgling software companies to get them quickly into the Unix market.

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PROFILE

Computing is still fun for the kid who made it to the top

DAVID RODMAN was 10 when he started programming. Nowadays that is not uncommon, but in the early 1960s Rodman was something of a prodigy.

He wasn't just playing games, either. His early computer experience was at the Artificial Intelligence Laboratory at the Massachusetts Institute of Technology (MIT). Rodman's father worked at MIT and the son used to visit him after school.

He soon got bored with his father's office and wandered down the hall into the Artificial Intelligence Labs. Soon the staff were letting him key-in programs to the PDP-1 which their research centred on.

"They called me the Kid," Rodman says. "I became their mascot. Computers for me were something of an addiction."

He describes himself as a troubled child, with not a particularly happy home life. But in the MIT laboratory he was accepted. And he found that playing with computers was fun.

Rodman, who is now chairman and managing director of his own company, DJR Associates, still thinks computing is fun. When he thinks of his early introduction to computers, and the delight it brought him, he says he finds it hilarious that you can now get a university degree in computer science — "a degree for watching television," he says. "I was doing it for fun."

He doesn't have a degree to his name. After seven years at MIT as

a mascot and hanger-on, he went to the wide world — and wandered around. He did a stint as a cab driver in New York City, sold cameras, tried his luck as a musician, and found some work in off-Broadway theatre.

Finally he drifted back to Cambridge, Mass., where he got back into computing with a company that developed and disseminated training programs for drug abuse schemes. The first problem he attacked there was a mailing list system, working with an outside company to develop a computer-based solution which, he says, taught him that the customer does

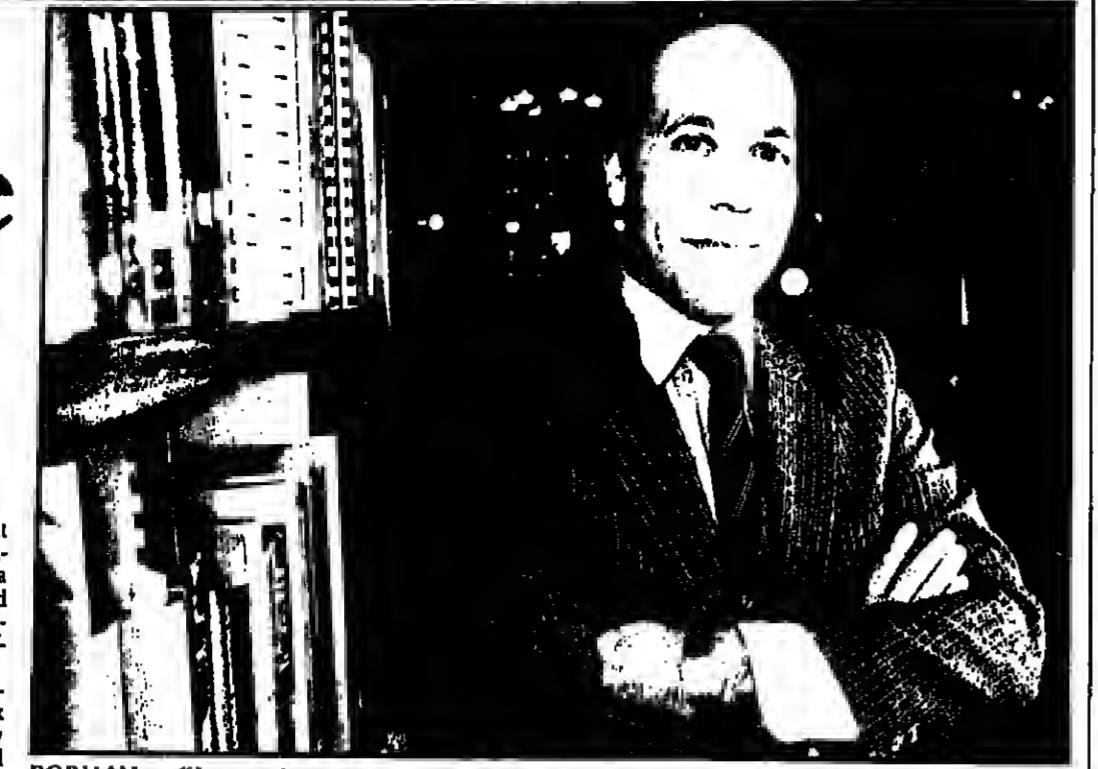
not know what he wants the way a

programmer does.

That in turn, he says, instilled in him the desire to find a common language that could be understood by business and programming people. Harking back to his days at the MIT Artificial Intelligence Laboratories, he saw a way towards a solution.

In the early 1970s Rodman started working for the Central Intelligence Agency through a consulting group, IRB Associates in Washington, DC.

He was director of data processing for the Human Factors/Bloy-



RODMAN ... "I am starting to peek my head out into the real world."

bernetics Laboratory in Rosslyn, Virginia. The work there was funded by the Department of Defense Advanced Research Projects Agency (ARPA), which at the time was behind nearly all artificial intelligence work in the US.

But Rodman found the strain of not talking to people about his work too much to handle. In 1974 he started his own company, DJR Associates, which was set up to provide software and consultation to clients in the Washington area. He eventually got a DEC minicomputer in his one-bedroom apartment, and he rented time to clients.

Looking at his clients' problems, he found the same thing was being done over and over again — adding, changing, deleting, and printing of records. Why not, he asked himself, write a program to do that? "but which separates the format of information from the program?"

So was born FMS 80, which Rodman says took the leap of separating process from data.

The initial product had no re-

port generator, or language, but people were crazy about it, Rodman says.

FMS 80 developed into 50 or so programs which were parameter driven. Users no longer had to write programs, but could tell programs how a job was to be done. The result, says Rodman, is to bring computing power into the hands of reasonably intelligent people who don't want to know how computers work. "For me," he says, "it was almost a crusade."

FMS 80 sold well in the US, and for a while was one of the top selling database systems for microcomputers. But it is off the charts at the moment, pushed into the also-ran by systems like Ashton Tate's dBase II.

Technically, Rodman believes FMS 80 is one of the best systems.

But he realises now that technical excellence doesn't necessarily win the day. "If I had gone to college, I might have known this," he jokes.

He admits to knowing little

about marketing, and says only recently has he become a good salesman.

"I am starting to peek my head into the real world. I have been reluctant to succeed," Now, he says, the product is leading him.

In the UK he has one convert, David Warren, of Panoramic Computing, a small start-up software company in Wiltshire. Panoramic distributes FMS 80s here.

"Marketing manager Northern Europe" was one reply. "The president Northern Europe," another. "Regional vice president," yet another. So we phoned his PA.

"He's actually all of them," he replied, "except marketing manager UK, that was his old job."

Rodman is now in the process of seeking funding for his company in the UK, ready for a big marketing push.

His hope is to sell software which "appeals to people's common sense," and which will give microcomputers a better name.

His ultimate dream, he says, is "one computer and one program".

He says he's on his way towards "totally intelligent system". If he achieves that aim, they might call him the Kid again.

The vices of marketing

JUST who does John Clemon think he is? We thought he was NAS marketing manager in the UK. But no. Somebody else claimed him to be vice president, European operations, so we thought we'd better ask NAS.

"Marketing manager Northern Europe" was one reply. "The president Northern Europe," another. "Regional vice president," yet another. So we phoned his PA.

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DOWNTIME

Disinformed in Hounslow

A CASUAL visitor to Wang's Hounslow, West London, office, en route to Data General's building in the same neighbourhood, had the bright but unfortunate idea of asking the Wang security man the way.

"Ah, yes," said the security man at the desk. "Data General, eh? What you want is London Road, Isleworth, dearie." And he very kindly routed the caller through the rush hour traffic, three miles the other side of Hounslow.

After a fruitless trip, she discovered Data General about an hour later, lurking just across the road from the aforementioned competitor.

No doubt the Wang man was referring to the Isleworth engineering and maintenance department and meant well. Or perhaps he was just extremely loyal. A bit Wangier.

ARB we all being conned with dreams of a fifth generation computer that walks and talks and listens to our conversation? Yes, says Gordon Bell, who calls the Japanese fifth generation a massive public relations programme.

Bell, once head of engineering at Digital Equipment Corp

and a highly acclaimed computer architect, last week gave

the second annual British Computer Society Jubilee lecture,

which is sponsored by Computer Weekly. In a far-reaching presentation, he challenged much of the conventional wisdom about where computer technology is going. And in so doing he put some of the wilder claims about the fifth generation into some perspective.

Even while calling the Japanese effort "one of the most fabulous games around", Bell did not belittle the potential effect of what they have started. It is also a creative vision, he said, which has caught our imagination.

Bell also has no doubts that the Japanese will reap enormous benefits. They will learn how to do research, they will learn a great deal about knowledge engineering and other artificial intelligence techniques, and many important by-products will come from the far-out goals they have set themselves.

Leaders of the Alvey Programme, the UK's own fifth generation project, might feel a moment of anxiety after hearing Bell's words. Have they been led down the garden path?

The repeated call for more productivity implies fewer staff.

What is more important is to consider the work that needs to be done to make society pleasant for all, not just a few. For a few decades there is more than enough work needed, compared with the number of people available to do it; but most of this work is not for making new products (creating wealth).

No — at least as long as they don't believe in the magic of revolution.

The next generation, Bell predicts, will be more of what we have. And the way forward, he believes, simply requires a lot of plain work. That is not to say that future developments will be boring. There will, Bell believes, be at least another 20 years of fine exponential growth ahead. But we must be cautious about what we throw our money at. And we must not forget that while ours is essentially a service-based industry, those services are based on excellence in engineering and manufacturing.

It is clear that the Japanese manufacturer is not the only one to be concerned about the future of the industry.

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PLUG COMPATIBLES

When Amdahl threw down the gauntlet to the Blue Giant

Chris Naylor plots the ups and downs since Gene Amdahl had his IBM plug compatible brainstorm back in the 70s

IN 1970 Gene Amdahl, then of IBM, had a very good idea and it went, roughly, like this.

IBM makes lots of money making computers, charges a more than goodly sum for them, and has precious little competition. This is because a customer, once he's bought IBM, gets locked into IBM with no easy alternatives.

Why not provide him with an alternative. An alternative that doesn't involve the customer in having to abandon IBM altogether — just an alternative source of supply for one, pretty essential, piece of kit: the processor.

In short, why not make an IBM plug compatible processor that could be sold straight into IBM's established customer base at a price and performance that would bring tears to the giant's eyes?

Sounds like a good story? Well, however it sounds, Gene Amdahl must have been pretty good at telling it because he persuaded three sources of finance — Heizer Corporation, Fujitsu and Nixdorf — to put up no less than \$50 million on the strength of this tale, simply in order to design and build one processor.

That processor was the Amdahl 470 V6 and it was soon finished and on to the market until 1975, during which time, one can reasonably surmise, the floorboards of executive offices must have become damp with sweat from the foreheads of those who had put up the money.

In fact, so moist did the foreheads become that one, Nixdorf, pulled out altogether, leaving just Heizer and Fujitsu to foot the bill.

The floorboards of executive offices became damp with sweat from the Heizer and Fujitsu foreheads

which made everyone wonder what was going to happen next.

At about the same time, the computer industry itself started to slide into one of its periodic spells of recession — and the effects at Amdahl of recession and uncertainty showed themselves in the form of a first-time drop in profits in absolute terms coupled with a drop in turnover. This is the second phase of Amdahl's existence.

Now, amidst talk of beefing up and down either permanently or temporarily, there springs to mind the obvious question: How?

That is, how do you beef up a machine? And how do you beef it down? And, how does the Accelerator do it only temporarily?

After all, if it takes five years to develop the original V6 you surely can't just sling out a new model in a matter of months?

The answer is apparently fairly standard mainframe practice. What you do is to build just one machine — a powerful one. Then you slug it so that it runs slow and put that slugged version on the market. Remove the slug a few months later and you instantly have an upgraded, higher-powered machine all ready for customers to move to.

And, from the users' point of view, cheaper simply means less mips. So, by slugging the machine, a larger market is created which enables overall costs to be brought down, which is of likely benefit to the user in the long run. There is also a guaranteed upgrade path in the machine series by the successive de-slugging of the machine.

That is how the marketing works. And, in case anyone has any odd ideas, it isn't only Amdahl which has practised this to good effect. It is a fairly standard ploy of mainframe manufacturers — to let users do their sums on a money and mips basis whilst they do their sums on a money and production volume basis.

The benefit to Amdahl up to 1979 was obvious — it pretty well cleaned up. The benefit to the user was also substantial — by introducing competition into the IBM processor market, the cost of mips fell for whoever they were bought from.

But IBM wasn't astute during this time. The 308X was announced; prices of the 3032 were cut; and word spread concerning a new IBM operating system — MVS/XA.

The official Amdahl line is that these things were sent to try the company, not to destroy it. But in 1981, Amdahl raised a \$370 million line of credit which argues two things: one, that it was still seen to be very viable; and two, that it anticipated a pretty hasty grind in order to stay there.

Both arguments seem to have been sound. Amdahl appears to be currently very viable, having added Fujitsu-manufactured 6000 Series disc drives to its range and, finally, launched the 580 Series. A glance at its 1983 figures tends to confirm this view.

It wasn't disastrous trouble (Amdahl is still there) but it was a combination of sobering occurrences. For a start, IBM started rocking the boat with the announcement of the 4300 Series.

The user, of course, doesn't

need to be able to deliver faster than IBM.

But with the 580 Series now well

and truly available, we get to the third stage of Amdahl, the current phase, and the question arises: what, actually, is Amdahl?

The answer has to be that it is no longer realistic to regard Amdahl purely as a plug compatible manufacturer



Amdahl aimed to sell the plug compatible processor at a price that would bring tears to the giant's eyes.

good for a firm which, some feel, has to be able to deliver faster than IBM.

For Heizer and Fujitsu, which still remain shareholders in the action, it must look like a few American companies are having trouble getting to grips with the market. Another seven people have joined the machine inside out. In addition, external consultants are called in to advise if necessary.

With his mixture of staff and ICL's background, von Bulow is also trying to convince users it has

the support resources and networking experience. This view is supported by the first Atlas user, the Science and Engineering Research Council (SERC), which received two IBM 360/195s.

"It hasn't taken off," says the director of the Atlas division. "The systems have proved tougher to sell than we expected. We hadn't expected IBM price-cuts or that the company would be so flexible on pricing or that there would be such a huge drive on XA."

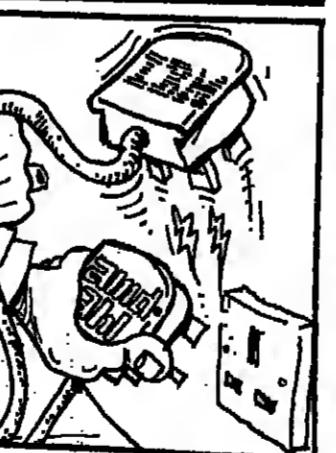
XA is the extended version of IBM's flagship operating system, MVS; so far ICL has concentrated on MVS, but it will start delivering on XA.

Meanwhile competitors in the IBM-compatible market laughs off ICL's attempts to break into the business. And even senior ICL users say they are not taking the company seriously.

"The market is full already with established firms like Amdahl."

Some users suggest that Fujitsu forced ICL to take the Atlas range as part of the technology deal. Von Bulow denies this.

On the other user views he says:



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PLUG COMPATIBLES

ICL: battered but still undismayed

Despite the failure of Atlas, ICL is hanging on there says John Kavanagh

OLAF VON BULOW is cheerfully frank about the fact that ICL has won only three customers for four of its Atlas 10 IBM-compatible mainframe in two-and-a-half years.

"It hasn't taken off," says the director of the Atlas division.

"The systems have proved tougher to sell than we expected. We hadn't expected IBM price-cuts or that the company would be so flexible on pricing or that there would be such a huge drive on XA."

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Von Bulow says, "But a string of other models followed. There has also been the new IBM pricing flexibility. As at the start, there was a clearly-defined high-performance market — but IBM's subsequent moves changed all that."

Hopgood at SERC says that ICL was "keen to sell Atlas and made us an attractive offer". Von Bulow agrees — but says ICL did not make a loss on the deal.

His hope is that the market will eventually turn on IBM. "IBM just can't carry on like this, making people live in fear and running the market just as they please," he says. "In Greek tragedy it's called hubris — and one day it will hit IBM. We will have to hang on in there."

IBM has dominated the industry since the late 1950s. ICL has been hanging on there since 1981. But von Bulow still stays cheerful. John Kavanagh is a freelance journalist.



Von BULOW ... "Atlas systems have proved tough to sell."

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Fierce rivalry rages in the compatible community... Keith Holder reports

Vendors keep IBM right up on its toes

THE plug compatible mainframe, a machine which can be substituted for an IBM computer without loss of function or change of programme or operating system, has kept IBM on its toes since 1975.

Of the manufacturers who make their living from IBM's customers by persuading them to adopt these compatible processors, the Japanese company Hitachi has become one of the most successful with a 48% slice of the plug compatible cake.

Its machines do not merely match, but surpass the performance of IBM's range by a comfortable margin, and have maintained a 20% price performance advan-

tage over "Big Blue" since their launch. They not only replace IBM machines but offer advantages to the user like air-cooling, improved reliability, maintenance and support.

Hitachi is unusual, however, in that its machines are available from three vendors: National Advanced Systems (NAS), Olivetti and BASF. This trio sells into the same market competing with each other.

Just why the Japanese company decided to set up deals where its distributor would find themselves in competition was never explained at the time. The most popular, privately expressed, opinion from the companies them-

selves is that Hitachi, in the light of its embarrassing experience with its distributor Itel, which crashed in 1979, had decided never again to put all of its eggs into one basket.

Instead, it wanted to present a solid local image, from established name companies in Europe, copying IBM's image strategy.

Once the three distributors began to deliver their first machines, the first of a series of highly unsuccessful negotiations began between them. These were aimed at carving up the market into sections which would become exclusively exploited by only one company.

Eventually, despite some published reports about what would become of Olivetti's computer division and whether NAS would ever speak to the Japanese again, the stage was set and the three continued to trade - with varying degrees of success.

The situation today is that the market has declared NAS the clear winner in the context of European marketing ability, with almost 30% of the total market. BASF has just over 10% and Olivetti about 7%.

Of the three, Olivetti has suffered most in recent times, while BASF's order book suggests its position will improve.

Olivetti's poor performance is said, by Jeff Evans, manager of its new plug compatible division, to be attributable to a lack of understanding by the main parent company. He says salesmen were required to sell a variety of products alongside the plug-compatible computers, and were never able to match the efforts of its rivals.

This was despite a first year which showed the company doing well, selling 18 Hitachi machines and 37 IPL processors; well over the company's forecasts. Many of these sales were, understandably, to Itel.

After this, things got steadily worse, to the point where there was serious speculation that the company would drop Hitachi's range altogether, though continuing to support its existing user base.

At the time, Olivetti, in theory, offered the complete Hitachi range, though Evans says that in practice, the company only concentrated on the higher powered machines.

Times have changed, says Evans, as has the company's approach to selling plug-compatibles. The plug compatible division, formed this year, is getting into its stride and plans to capture 10% of the market over the next two years.

Although the recent 20% share acquired in the company by AT&T does not directly affect this sector of Olivetti's Evans does not rule out the possibility of marketing new products from AT&T in the future.

Both NAS and BASF have expressed, unflattering opinions of Olivetti's ability to stage a comeback, but Evans is adamant that the division has a bright future. It has added some new machines to its range in the last month, two from Hitachi and one from IPL.

Whether Evans' more aggressive stance pays off with orders only time will tell. He says the announcement of some major orders is imminent.

BASF's computer systems marketing manager, Rolf Brillinger, is even more ambiguous, and aims to see his company number two only

to IBM in Europe. The company relies totally on Hitachi for its computers which range from low-end medium systems equivalent to the 4031, to large-scale machines able to compete in the top of the 308X market. It has traditionally sold large numbers of machines for leasing, but is now more concerned with selling direct, he says.

Brillinger is a realist, however, and realises that the road to a larger slice of the market needs a softly, softly approach, where it is important to get a foot, or more precisely a processor, in the door and work up from there, rather than going for all-out strategies.

Top of the Hitachi tree is NAS. It has been said that at the very top level IBM executives don't know plug compatibles exist

THE IBM plug compatible business is now over 10 years old and if US IBM watchers are to be believed it is hitting somewhere around 10% of IBM's business.

That is the level at which it has been said, many times, that IBM would take action against the companies involved. So IBM gunning for their rivals? Will it put them out of business?

If we look back over the period since the US anti-trust (dominant company) case was dropped in January 1982, we can see a distinct change in IBM's behaviour both in time to time feels the need to sort out.

They are active in just about every aspect of IBM's business - from software - both systems software and applications - to

its own back yard. So while the plug compatibles don't figure largely in IBM's view of the world in their own right - it has even been said that at the very top level IBM executives don't even know they exist - they are important because they present an additional complication, and one which IBM from time to time feels the need to take IBM on; it failed.

IBM quickly realised the difficulty of adopting the IBM approach and doing everything itself, consequently a deal was struck with Fujitsu. Fujitsu took about 30% (early this month it upped its stake to 50%) and became a major supplier of basic components such as chips and boards to the company.

Itel, which was the world's largest leasing company, had two sources of supply: Hitachi, Japan's second largest computer manufacturer behind Fujitsu, and National Semiconductor. Natsemi picked up Itel's CPU business for a song and rechristened it National Advanced Systems (NAS) when the launch of the 43xx series in 1979 (with its massive improvement in price/performance) forced Itel into bankruptcy.

Both NAS and Amdahl are heavily reliant on Japan, even today. It is almost certainly true that there would not be an independent IBM-compatible CPU industry today without the Japanese.

Two factors enabled Amdahl to survive against the odds: Gene Amdahl, chief architect of IBM's 360 series, and Fujitsu. Between them they enabled Amdahl to offer technically and technologically advanced systems at a significant saving over IBM, even with IBM's massive manufacturing economies of scale.

Amdahl managed to come out with its first machine in 1975 and the company is still going strong today.

Itel, no longer with us, was not killed by its plug compatible hardware: discs, CPUs, personal computers and terminals.

Undoubtedly, the most successful area has been CPU manufacturing. With IBM setting margins of about 60% on its largest processors, there has been plenty of room for third parties to undercut IBM's prices. But the first two successful suppliers - Amdahl and Itel - found that manufacturing advanced processors to

Rising out of the ashes of Itel's failure, the company has steadily clawed its way up the market share ratings to the point where only Amdahl sells more machines.

Like BASF, it relies solely on Hitachi for machines, though this was not the case until early 1983, when its parent Natsemi stopped production of its AS series.

So IBM is not worried about the lookalikes, and it is not worried about the Bunch, what is IBM worried about and just why has it acted as it has done over the last two years or so?

There are two threats looming on IBM's horizon: the newly deregulated American Telephone & Telegraph (AT&T) and the Japanese.

The consensus among all Hitachi's distributors is that the so-called Japanese, with its provision for IBM to inspect all Hitachi's new processors before release will not affect the market.

In the future, there is the likelihood that NAS will expand its sphere of influence. One possibility is that it will take on Hitachi's S-810 array processor, able to do better with companies like Cray. This would be a logical move as the company's top end 9000 series machine can act as a front end.

Hitachi is known to be at an advanced stage with a machine which will provide its answer to IBM's Sierra multi-processor mainframe, which are expected around November this year.

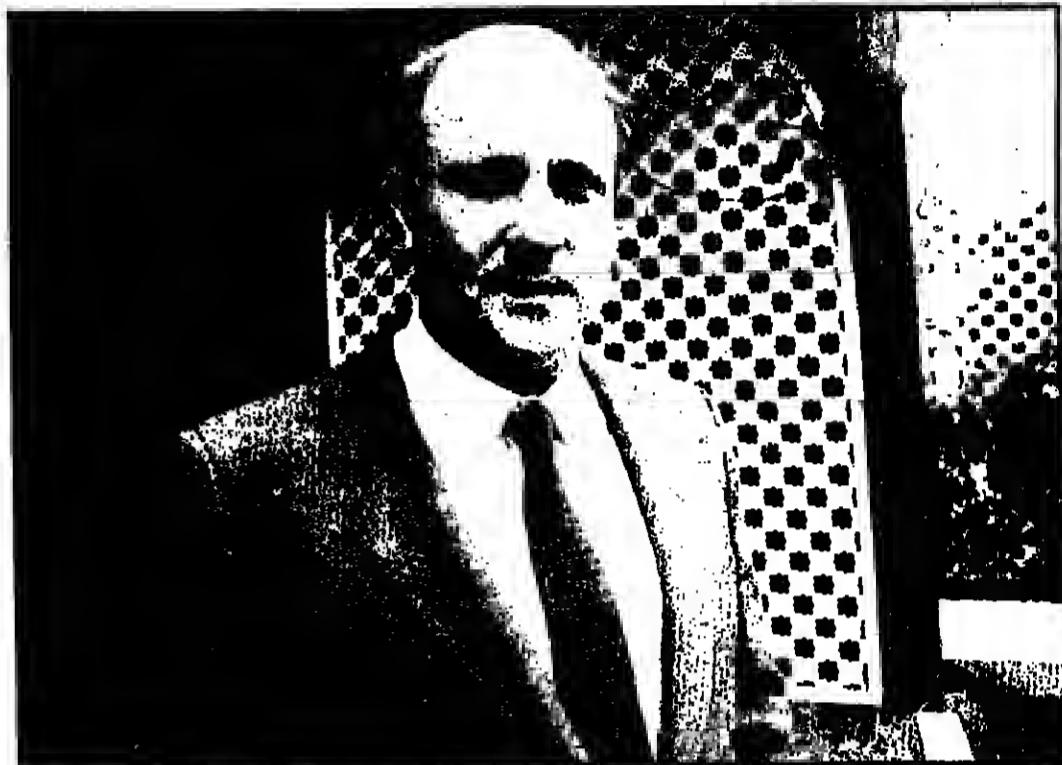
There is still no sign of any agreement between the three distributors on market sharing, and so the sometimes bitter fighting to decide who will sell you a Hitachi processor continues.

To deal with those two threats, IBM obviously wants to keep a close watch on what is going on in

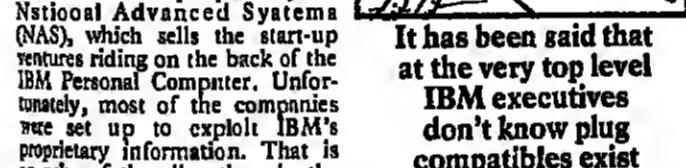
IBM's competitors have not had

Why it suits IBM to tolerate and contain its imitators

The giant is simply not worried, writes Kevan Pearson, although from time to time it takes action to sort them out



CURRAN ... "By 1990 there will only be two computer manufacturers - IBM and the Japanese."



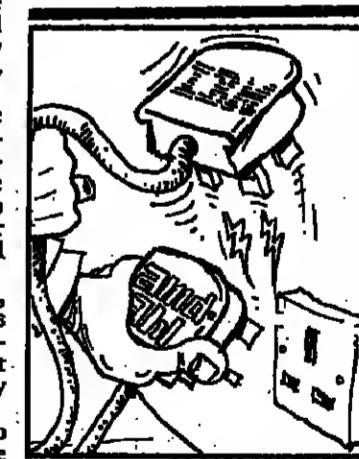
It has been said that at the very top level IBM executives don't know plug compatibles exist

an easy ride, for reasons which have nothing to do with IBM.

IBM, for its part, has sought to put additional pressure on them through assiduous use of "FUD", fear, uncertainty and doubt.

Gene Amdahl was first to use the term in the Juarez Department was looking for IBM had no intention of providing that excuse.

Instead, the company chose to launch new products strategically, like virtual storage, like the 43xx and like MVS/XA to cause maximum FUD. This worked and the IBM-watchers, technology and sometimes pseudo technology, and above all, through the finest marketing and sales force the world has ever seen.



Plug compatibles can still offer a better deal, usually on better products than IBM

But why did IBM let the plug compatible business start up in the first place, and why does it let it carry on today?

The answer is that in the 1970s, when the business really showed itself to be viable, IBM was in the middle of the most costly, complex and extensive anti-trust cases ever brought by the US government.

Any deliberate action such as massive price-cutting or deliberate competition knocking would have been very bad for the anti-trust case.

The government wanted nothing less than to break IBM into several smaller organisations. If

Kevan Pearson is editor of IBM System User.



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PLUG COMPATIBLES

The industry leader could quickly pull the plug on the plug compatibles says Steven Sonsino

It pays IBM to leave gaps

LATE last year, during one of the many anti-trust cases then proceeding against IBM, the EEC insisted that IBM publish full technical specifications of the interfaces it used in links to peripheral equipment. This would give the plug compatible peripheral manufacturers a fair chance of developing alternatives to IBM products early on in the life cycle of the IBM product.

IBM consistently refused to publish any such details, saying that to do so would give away important trade secrets. But it shows that IBM considers peripheral manufacturers and interfaces very

important.

National Advanced Systems, a major plug compatible manufacturer, explains that one of IBM's strategies would be to encourage standards authorities to leave loopholes for plug compatible manufacturers in their interface specifications.

This opened up the market for companies like Memorex, Storage Technology and Hitachi. National Advanced Systems also has a compatible product, the 7380, and this is already installed on some UK sites.

Plug compatible manufacturers hold about 20% of IBM's peripheral market, but there is enough for everybody. Some observers be-

lieve IBM could put these companies out of business in 12 to 18 months if it wanted to, but it is unlikely to do so for various reasons.

IBM leaves gaps in the market

that it is not prepared to fill. These gaps typically include difficult installations that need special hardware or software, and in IBM's eyes, such products will have a limited appeal. Other reasons are political, and some have legal, anti-trust implications.

IBM is as trapped in the compatible marketplace as are its plug compatible rivals. It has moved away from some areas — the excursions into extended architecture, for example — but the making of compatible products can only go on. The users hope so, anyway.

Acquiring Memorex has given Burroughs a place in the plug compatible peripheral market and a bigger captive base on the OEM side. Burroughs makes only one request of Memorex — that any new products are fit either for the IBM market, the Burroughs market or the OEM market. This seems to work quite well for most of the Memorex fixed disc drives, the 3½ inch ones in particular.

Memorex is about to introduce 5¼ inch removable hard disc

drives, and 128K of parity checking memory are proving to be the norm. Keyboards are often an exact copy of the IBM layout, even to the extent of the peculiar and much criticised return and shift keys, although some offer an option to have these replaced by the more acceptable variety.

Software compatibility is much harder to assess as it obviously does not lend itself to simple visual checking. The heart of the IBM, and the area where copyrights are most easily enforced, is the machine's basic intelligence held in ROM.

IBM chose to use Microsoft's PC-DOS as the operating system for its PC.

The acceptance of IBM compatibility to the market place has not been as widespread as many expected.

There has been a marked reluctance by potential customers to commit themselves to buying what could actually be described as a cheap copy. Compatibility is not a cut and dried issue and no machine, as yet, has proved to be 100% compatible.

The IBM-PC has never been regarded as a technically advanced machine. Based on a semi 16 bit processor, the Intel 8088, and providing, in the most popular set up, dual 320K disc drives and 128K of RAM, it could be asked why other manufacturers should want to copy such a mundane design.

If the machine had not borne the magic letters "IBM" it would probably have been doomed to a life collecting dust on dealers' shelves.

The tremendous respect those initials commanded in the office environment gave it enough impetus, especially in the US, to initiate the self-sustaining cycle based on the premise that the more users a machine attracts, the more software is written for it. In other words, the more software the machine has, the more users it will attract.

A PC-compatible should be able to run almost all the software currently available for the IBM. It should also be able to accept all the hardware enhancement options available for the IBM, currently reaching staggeringly high numbers in the US without the need for any modifications.

PC compatible manufacturers attract customers away from IBM by offering two main incentives. The first and primary incentive is one of initial cost saving.

The second incentive is to offer a greater expansion potential by increasing the number of bus extension slots for extra cards on the motherboard.

PC-compatibles invariably have a very similar hardware specification to that of the IBM. An 8088 processor, dual 160K or 320K disc

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PRODUCTS**Desks take the pressure**

STC Components has introduced a range of professional work centres, desks and cabinets which have been tested using both a 2.5 ton distributed load of individual weights, and by getting a two-ton elephant to exert concentrated pressure on work tops - both actions proving the strength of the units.

Traditionally, work centres have employed welded sections in their construction, generally to strengthen the framework of the units and enable them to support a range of equipment from programmable control systems, peripherals, instrumentation etc, to standard office equipment.

But to provide the structural strength required, STC Components has developed an extrusion for the framework which, with the variety of accessories and novel half-depth pedestal options, not only provides versatility in construction, but allows up to 50% more equipment housing capacity than other systems in the same spatial area, says STC.



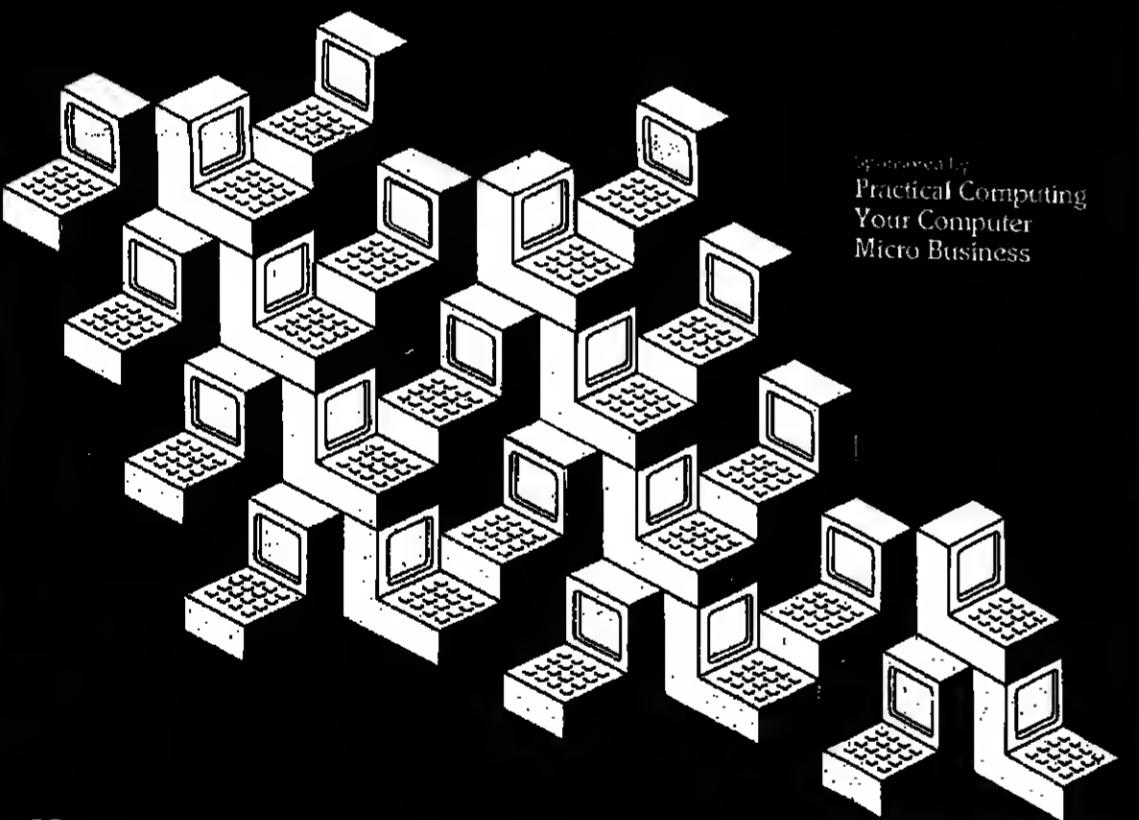
How do you carry out accelerated life tests on a range of workstations? To check that initial proving tests were correct in indicating that the new range of Euroconsoles will be capable of carrying very heavy weights over a number of years, STC Components hired the services of a two-ton elephant to exert concentrated pressure on the units. The result, as can be seen, was more than satisfactory!

Pedestals and cabinets accept all 19in subracks, chassis and panel-mounting equipment and power is supplied via internally or externally mounted distribution sockets.

Cables are housed in trunking which can be fitted exactly where

cable forms are required.

STC Components (CW), 190 The Strand, London WC2R 1DU, Tel: (079) 26811.

Success Breeds Success

National Exhibition Centre, Birmingham, May 4-7, 1984.

After one year the Midland Computer Fair has already established itself as an outstanding exhibition. Not only is it the leading exhibition in the Midlands for the latest computer and related products, but it stands as a major regional centre for alternative computing.

In response to the demand for expanded exhibition space, the Midland Computer Fair has moved to the Birmingham International Convention Centre, Birmingham. The NEC building, especially built for the exhibition, will

be the fitting site for this major event which attracted over 17,000 people for the first show.

Whether you are interested in recent improvements or would prefer to take a look at the history of computing, there is something for everyone.

The Midland Computer Fair is the right place to meet the manufacturers of the latest micro computers, success stories and those you may have heard about on television.

The Midland Computer Fair is held in the NEC building, Birmingham, on May 4-7, 1984.

Return to the Exhibition Manager, Reed Exhibitions, Surrey House, 1 Throwley Way, Sutton, Surrey SM1 4QQ. Tel: 01 643 8040 Telex: 946564 BISPRSG.

Name:

Position:

Company:

Address:

THE Midland Computer Fair
The Midland Computer Fair
Show Business Systems

System can interface 128 micro terminals

AN addition to the Burr-Brown family of industrial and commercial data processing equipment, the TMC900, is a communications processor for factory floor data collection systems and other multi-terminal networks.

It can interface up to 128 front-end Burr-Brown microterminals to a single communications port in the host computer and has an input response time of normally less than one second for any terminal.

TMC900 performs terminal polling, local validation, error recovery and basic transaction processing. Definitions of up to 100 transactions can be downloaded to the TMC900, and each transaction can have up to 10 prompt/reply editing specifications.

Unless specific validation by the host is required, the host will receive only the variable data for the transaction (tagged and timestamped) when the inputs are complete, says Burr-Brown.

Burr-Brown International (CW), Cassiobury House, 114 Station Road, Watford, Herts WD1 1EA, Tel: (0923) 33837.

Teleprinter terminal comes in briefcase

TELEPRINTER Equipment is introducing a new version of the portable Victor teleprinter terminal.

The innovations on the model include the facility to operate from either 110V or 240V electrical supply, and a built-in acoustic coupler which adjusts to accommodate all telephone sizes.

The new machine comes in a briefcase format and weighs, with case, just 15 lb. It has an optional internal modem to CCITT requirements and enables users to plug into computer systems from

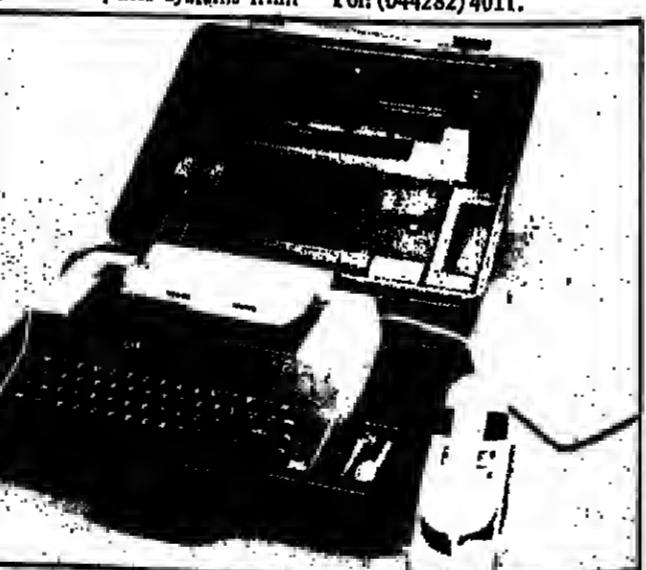
anywhere in the world.

One of the Victor's advantages is the use of plain telex paper to keep operating costs down.

Print speeds are 55 cips at 10 cpi and 80 cips at 15 cpi, operating up to 1,200 baud. Full graphics are possible with a 120 by 60 dpi capability and the option of 4K or 16K edit buffers are available with both KSR and MSR versions.

Teleprinter Equipment (CW), Akeman Street, Tring, Herts.

Tel: (044282) 4011.



The upgraded Victor portable terminal.

Link-up to Wordnet

WORDNET International has added the Rank Xerox 500 Series of electronic typewriters to its office networking system, the WordNet 2000.

WordNet is now able to link most models of the Rank Xerox range into the 2000 office linking system which enables each typewriter to act as an input terminal to a word processor. The data is sent to the WordNet CPU as each page is finished.

Up to eight electronic typewriters can be linked into the system including those from Olivetti, IBM, Triumph, Adler and Olympia.

The Rank Xerox 500 Series incorporates automatic correction, carriage return, emboldening, underlining and character memory.

WordNet International (CW), Elton House, London Road, St Albans, Herts AL1 1JJ, Tel: (0727) 32983.

Streamline connection

THE Jaguar Streamline is a device enabling computers to connect to the new telex lines now being provided by British Telecom. It takes Ascii 'asynchronous' instructions from a computer port or terminal and automatically connects to the requested remote telex location.

The user dials the complete text of his message into the large buffer in the Streamline which performs all code and speed conversion on behalf of the user, says Jaguar.

Typical uses of the Streamline are the connection of minicomputer ports to the telex network and the provision of a telex gateway for an asynchronous terminal network.

Jaguar Communications (CW), Elton House, London Road, St Albans, Herts AL1 1JJ, Tel: (0727) 32983.

MANTIS

ATTENTION!! ALL USERS OF APPLICATION DEVELOPMENT SYSTEMS

"IF MANTIS CAN'T DOUBLE YOUR PROGRAMMER PRODUCTIVITY IN 60 DAYS, CINCOM WILL GIVE YOU DOUBLE YOUR MONEY BACK!"

Cincom Systems

PEOPLE



■ At Rank Xerox (UK), Bob Wheeler is appointed director of operations, having been director of planning, information and finance for several years. He replaces John Pemberton who is moving to a new position in Rank Xerox international headquarters as director, business strategy development. The role of director of planning, information and finance is taken by Paul Riddle. He has latterly been controller, Region One in Rank Xerox international headquarters. Roger Eade becomes director of quality.

■ Network Systems Corporation has named Tandy Gray as Northern European sales manager. His territory includes the UK, Scandinavia and the Benelux countries. Gray joined Network Systems from Data General.

■ Peter Bedells has been appointed sales and marketing manager of Sherwood Computer Centre, Romford. He joins following six years with ICL as account manager specialising in the insurance field.

including the Lloyd's market.

■ Cybernetics has appointed Bruce R. Fox as director of international marketing. His previous marketing experience includes appointments with the Bell Telephone Co. and Gandy Communications. Cybernetics UK subsidiary, Brent-Cybernetics, names Colin Perry as area sales manager.

■ Package Programs has appointed Jane Rawland as a client support consultant and Mike Hardman as a sales executive in its Asset Management Systems Division. Rowland has spent the last six years with Datamation Systems in the United Arab Emirates, where latterly she was special projects manager responsible for setting up agencies and training courses at the National Computing Training Centre. Hardman has been in the US for three years, selling software packages for the defence and aerospace industries.

■ Bill Bartan (below) has been appointed manufacturing manager at Transradio. He was previously production manager at TI Gas Spares and before that with Clark International Tools. Transradio manufactures and markets RF connectors and cable for the electronics, data processing and broadcasting industries.

■ Bernard Cohen (above) of Standard Telecommunications Laboratories (STL) has been appointed to the newly-established Chair of Information Technology at the University of Surrey. He will be responsible for the software and control systems group of the Department of Electrical Engineering and Electronics and for the teaching of software engineering at undergraduate and postgraduate levels. In 1979 Cohen founded what is now the Systems and Software Technology Division of STL. Since 1980 he has held an associate readership in the Department of Electrical Engineering at Brunel University.

■ David Myatt has joined Harris Digital Telephone Systems Division in Slough as a sales executive for the company's 110, 400 and 1000 line PABXs in the North. He previously held a similar position with Pleassey Communication Systems.

■ University Computing Company (UCC) announces the appointment of Paul E. Newton to the newly-created post of senior vice-president, UCC Software Products. Previously he was vice-president and general manager of the Systems Software Division. He joined UCC in 1968.

■ DIARY

MARCH 26

Electronic Design Automation, four-day conference, BCS/IEE, University of Warwick. Contact IEE Conference Secretariat on 01-240 1871.

Computer Appreciation for Managers/Users; Database Concepts; Word Processing and Office Automation, MSS Services two-day courses, Worthing. For further details phone (0903) 34755/6.

Operator Training, Data Logic two-day course, London, £290. For further details phone 01-486 7288.

VSAM for Programmers, Data Logic three-day course, London, £370. For further details phone 01-486 7288.

IBM Mainframe Hardware and Software, Dataserve Education three-day course, London, £260. For further details phone 01-499 7099.

Local Area Networks, BIS Applied Systems three-day non-residential course, Kensington Palace Hotel, London, £275 plus VAT. Details from Cherry, Bignor on 01-261 9237.

Database Systems Design and Basic Business Systems Analysis, BIS Applied Systems' four-day residential workshops, Queens Hotel, Eastbourne, £250 plus VAT. Details from Cherry, Bignor on 01-261 9237.

Cobol Programming, BIS Applied Systems' 10-day non-residential course, Training Centre, London, £330 plus VAT. Details from Cherry, Bignor on 01-240 9237.

8100 Programming, Compower five-day course, £305 plus VAT. Training School, Cannock, Staffs. Further details on Cannock 2311.

Microcomputer Applications, two-day workshop, Liverpool University. Further details on 01-709 6022.

MARCH 27

Information Technology in the Future, BCS Bristol joint meeting with IMS and Futures Network, Hawthorn Hotel, Woodland Road, Bristol, 7.30.

Data Protection Bill, BCS WP and OA Group, with South-east sub-group, Prof Bryan Niblett, University College of Swansea, £2, Commerce House, 21 Scarbrook Road, Croydon, £6.00 for 6.45.

Computers in Diagnostic Medi-



■ Brian Conran (right), Ian Goodman (centre) and Michael F. Lordan (left) have been appointed directors of Southwark Computer Services. Conran is head of the software group; Goodman is responsible for systems analysis and programming; and Lordan is responsible for the company's data centre. The new directors join Nigel Moy, chairman; David Hayes and Colin Clayton on the board.

■ David Taylor (below) has joined Vico Industries UK as managing director, with overall responsibility for Vico's UK and European operations. He was previously UK sales director of Ze-

nith Data Systems of Chicago.

■ Bill Bartan (below) has been appointed manufacturing manager at Transradio. He was previously production manager at TI Gas Spares and before that with Clark International Tools. Transradio manufactures and markets RF connectors and cable for the electronics, data processing and broadcasting industries.

■ Aim has announced a number of appointments to its board. Clive Telser, chief executive, also becomes chairman, while three senior managers have been named as directors: Michael Booth, currently company secretary; David Hewitt, general manager, professional systems division; and Keith Taylor, general manager, bureau services and supplies. Telser spent six years with ICT (now ICL) before joining Aim in 1966 as computer services manager. Booth joined

Aim in July 1977 as company accountant, having previously been employed for 10 years in a private accountancy practice. Hewitt joined Aim in 1968 as a trainee programmer, and was appointed sales and marketing manager of Aim Professional Systems Division in 1978, becoming general manager of the division in 1980. Taylor has more than 15 years' experience of the management and operation of large ICL mainframe computer installations.

■ Sheaffer has appointed Bob Fitzgibbon as MIS manager. He will be responsible for the data processing department, and actively involved in the general development of information management and systems development.

■ Chris Robinson has been appointed UK sales manager for Systematics International Microsystems. He was previously dealer manager for Viasat Computer Systems and most recently dealer account manager with Peachtree International.

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■ Psion, a UK microcomputer software company, has appointed Matthew Gaved, to head a new sales and marketing department. He joins from The London Tobacco Company.

■ Bull Peripherals UK has ap-

pointed a new technical support manager, John Hughes. His technical experience in high technology stems from 25 years in the Royal Navy as an electronic engineer, as an instructor training engineer at DEC and as training manager on Syntex.

■ David Taylor (below) has joined Vico Industries UK as managing director, with overall responsibility for Vico's UK and European operations. He was previously UK sales director of Ze-

nith Data Systems of Chicago.

■ Two new management appointments are announced by BIS Software to coordinate the development and launch of new systems. As planning manager, Don Urquhart (left) will be responsible for the company's technical and market research and for planning and prioritising new products, as well as enhancements to current products. He has been with BIS for nine years, and previously worked for ICL and Sperry Univac. John Willis (right) becomes product marketing manager for BIS Software. He spent 15 years in boating before joining BIS in 1977, and was formerly general manager of BIS's Luxembourg offices.

■ Robert Mangan has joined Peachtree Software International as production assistant, responsible for producing software sold to dealers, agents and licensees, and for the software library. He comes from Newcastle University. As a Peachtree account manager, Yusuf Hassan will be responsible for supporting and developing Peachtree's dealer network in the South. He was previously responsible for the sale of software for Wang machines from 1982. Mick Gould, who has been appointed Peachtree dealer sales manager, is himself an ex-dealer. Michael Dwanne has been appointed support consultant with responsibility for supporting licensee accounts, Peachtree dealers and end users. He was previously with Padmedic Computer Services.

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■ Three appointments have been announced at the Ryal factory of Pilkington Fibre-optic Technologies. Robin McEwen-King, formerly general manager, becomes managing director; Julian Watts becomes technical director from technical manager; and Colin Brady becomes works manager from production manager.

■ Brian Lynch, has joined BIS Applied Systems as a training development consultant with responsibility for EC3 and South-east London, Surrey, Hampshire and East and West Sussex. In 1972 he joined a UK-based international training organisation as an instructor for all types of data input equipment.

■ Carol Neun (below) has been named vice-president and general manager of Shugart Corporation marketing and sales division. Previously she was vice-president and general manager of Shugart's floppy disc drive division. She succeeds George Sollman, who recently left the company. Taking Neun's place as head of the floppy division is Paul Penney, who was vice-president/general manager of the company's Sunnyvale operation with his new post. Neun joined Shugart as vice-president of finance in 1980, and took over the floppy division in 1982. Penney joined Shugart in July 1982 as assistant general manager of the rigid disc drive division and became vice-president/general manager of the Sunnyvale division two months later.

■ Phil Lewis (above) joins Peachtree as a project manager with over four years' experience in project management for Rediffusion Central Services and Macro Computer Systems. As a member of the development division of Peachtree Software International, Lewis' current responsibility is the implementation of the new version of the Peachtree Basic Accounting System (PBAS) over the range of major manufacturers' microcomputers and liaison between the various departments involved. John Woodgate has joined Peachtree as project leader for the team working on the new European version of PBAS products. He previously ran his own company, Astigate, and carried out ten months' freelance work for Peachtree.

■ CONFERENCE

■ THIS year's annual Decui conference at Exeter University, April 2-6, for the first time will include delegates from the Middle East joining those from UK and Ireland. This year the User Group is expected to give its supplier a tough time following a year which has seen cancellation of the main-frame Jupiter product, alleged shortcomings in personal computer software and widespread changes in top DEC management. A feature of the conference will once again be the lively DEC panel session. For further information contact Tom Morgan or Mandy Marshall, Department of Human Sciences on (0309) 212041.

■ David Markby is now deputy managing director of CSC UK (Computer Sciences Co.). He joins after nearly 14 years with Leasow Software where he was managing director for the past three-and-a-half years.

■ Lynwood, manufacturer of intelligent computer terminals, has appointed a new financial controller. He is Bill Coutte Doolard, from Horne Brothers, the high street outfitters, where he was financial director. A Scottish chartered accountant, he previously worked for London Weet and Television and Rio Tinto Zinc.

■ George Dunford has been appointed managing director of IAL, the London-based technology systems and services group. He takes over from Jim Utterston, who remains chairman of IAL and managing director of STC Communications International, within which IAL operates as a subsidiary of Standard Telephones and Cables. Dunford joined IAL in 1955 as an air traffic controller at Tripoli.

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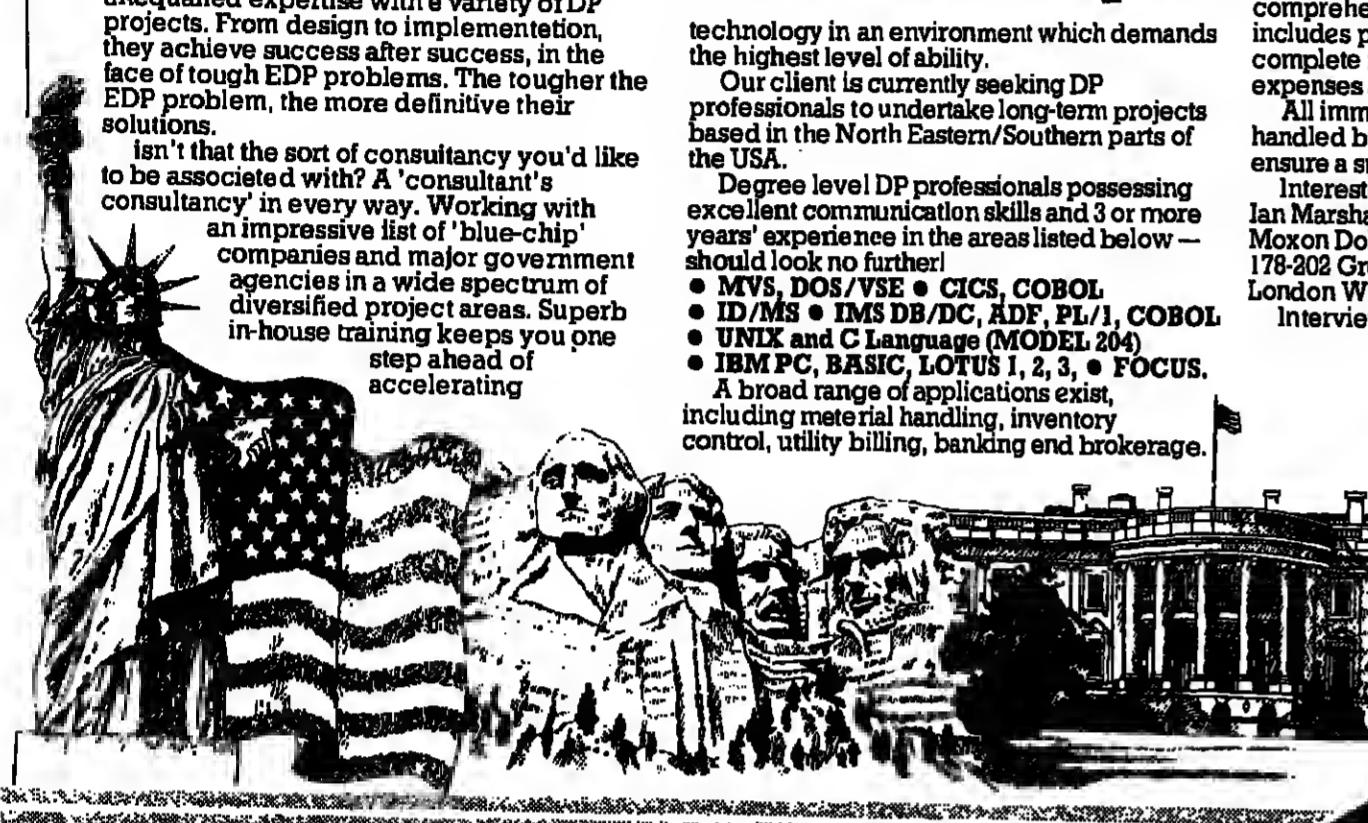
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- ★ International Reservations
- ★ Departure Control
- We are looking for people with proven experience in systems installation and development in one of these ACP areas or in ACP Operations or ACP Real-time Coverage/Support. You must have extensive experience in a large scale IBM online environment and ideally have a relevant degree though this is not essential.

SENIOR SYSTEMS ANALYSTS & SYSTEMS ANALYSTS

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In addition we require similar people for other areas each of which have their own specificities:

- ★ Finance & Administration Systems
- You should have experience in systems analysis/design using structured techniques preferably YOURDON. A background in COBOL/CICS/VSAM is essential. Applications include: Personnel Administration, Revenue Accounting, Accounts Payable, Accounts Receivable, Statistics.
- ★ Materials Management & Technical Services
- You should have experience in systems analysis, design and programming for online and batch applications, preferably inventory and aircraft maintenance systems with at least three years in IMS DB/DC, PL1, SPP and utilities.

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The Flight Operations Information System (FOIS) scheduled for installation this year is the most comprehensive in the airline industry, utilising structured COBOL programmes using CICS and the TOTAL Data Base. Relevant experience in these areas is essential. Applications include: Crew Administration, Crew Management, Operational Control and Flight Planning.

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We also require experienced ACP Systems Programmers, real-time coverage and operations personnel. Including ACP Console Operators and staff experienced in ACP systems maintenance and support functions.

SOFTWARE SYSTEMS PROGRAMMERS

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We need people to be responsible for maintaining the software system at the highest possible level. Major online systems under IMS and CICS are planned to be cut-over late in 1984.

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- * The Control Programme Software Support Group has responsibility for MVS/SP, JES2 and all programme products.
- * The Network Software Support Group has responsibility for NCP, VTAM, NPDA, NCCF and TSO.
- * The Data Base Software Support Group has responsibility for IMS and CICS.

In each group performance and monitoring tools are available and experience of using these tools would be an asset.

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The people we are seeking for the support and maintenance functions must have proven skills in Database Design and Administration as well as experience with either DBMS, IMS or TOS/AL.

You should have substantial experience in the area of Database Administration including several of the following areas: evaluation of new technology, design and implementation of databases, establishing standards and procedures, use and maintenance of DBMS software, data dictionary, problem determination and correction, tuning and data security.

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For informal discussion please call Peter Stevenson or Martin Kelly on 01-995 7735 ext. 138 or write with full c.v. to Area Personnel Manager, Saudi Arabian Airlines, 508 Chiswick High Road, London W4 5TC.



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CENTRAL LONDON**

Our Clients are a fast expanding and highly profitable micro and P.C. OEM supplying commercial turnkey systems.

An excellent growth record and high profitability have attracted venture capital investment which enables the company to expand rapidly.

To help them do this, they require a Sales Director who is experienced in the market place and can substantiate a record of successful management and business development.

This is a superb opportunity for the entrepreneur to grow with an organisation determined to become number one in the supply of turnkey business systems based on new and advanced microcomputer technology.

Contact BOB BOWER, Advising Director.
Ref: CW2203/12

PROFESSIONAL SERVICES

SENIOR SALES ROLES

**BASIC £19,000
OTE £30,000
CAR & GUARANTEE
LONDON & BIRMINGHAM**

Computer systems are increasing in complexity and in the variety of solutions available. The expertise required to advise on D.P. systems is therefore equally demanding, and our clients offer a comprehensive range of professional and consultancy services to help meet the ever increasing demand for professional advice.

With an excellent reputation built up over the past 15 years, they are now seeking experienced Professional Services Sales Consultants to help them continue to profitably expand the company.

We welcome applications from Senior Sales personnel with specific technical or commercial experience. A sound knowledge of the systems capability of IBM and/or major minicomputer systems manufacturers would be of particular interest.

Contact BOB BOWER, Advising Director.
Ref: CW2203/13

EXECUTIVE SEARCH

SALES MANAGEMENT

**£25K TO £45K+
HARDWARE SOFTWARE
CONSULTANCY**

The majority of recruitment work carried out at Huttons falls into the "search" category. Broadly speaking, this involves us in specific retained recruitment assignments for a number of prestigious clients.

These positions are rarely advertised since, after a decade of recruitment experience in the industry, we are quickly able to identify the correct environment in which to search, and the right people with whom to talk.

We may well have already talked to you, but if not, would welcome an opportunity of doing so to discuss the many assignments on which we are currently working.

Please contact BOB BOWER for an informal discussion.

CW2203/14

CONSULT THE PROFESSIONALS IN
SEARCH

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

Systems development in Bristol

FROM WHERE WE STAND THE OUTLOOK IS GOOD

**Senior Analyst Programmers
Analyst Programmers/Programmers
to c. £11,500**

We are undertaking extensive development work in our database and systems area and need experienced development staff to join our highly professional teams. The work includes developing many new company systems to meet future business needs.

Candidates ideally will be graduates or educated at least to A Level. Experience in PLI, MVS, TOTAL, CICS or MANTIS will be an advantage, although training is available to broaden your knowledge.

As part of a major group, our attractive benefits package includes relocation help.



Imperial Tobacco Limited

P.O. Box 244, Hartcliffe, Bristol BS99 7UJ

GOING SOLO...?

We are a rapidly developing Service Company providing support to Major Clients throughout the U.K. The Company is committed to continued growth of its computer facility and this is supported from Group level in Canada. Upgrading of our IBM 4331 is expected shortly and systems development, underway and planned for the future, is extensive and covers all aspects of the Company's operation.

Systems Programmer

to £9000

We seek a young enthusiastic Systems Programmer who is able to contribute at least one year's experience of DOS/VSE along with exposure to a variety of DOS and CMS based products, ideally POWER, SORT, VSAM, XEDIT, EXEC2, etc. We are committed to extensive training where appropriate, to include CICS, PLI, DL1, etc.

The appointed person will take full responsibility for support of the system and will report directly to Management. We anticipate that this opening will appeal to an ambitious and self-confident individual who can react promptly to an ever changing challenge. A contribution to future development of the system will be expected.

Our team works in an open friendly environment in close contact with Users and Management. The package that we offer is typical of an Organisation of our standing, including 30 days holiday and regular reviews.

To break out and take this solo opportunity, speak with our advising Consultant GRAHAME MURPHY on 021 236 3781 (24 hour answering service) or 021 778 2974 (evenings 7pm-9pm).

West Midlands.

Montgomery Court, Moseley, Birmingham B31 2QH

Hutton
Specialist Computer Recruitment Ltd

S007TH

01-335 0641-486-0361

MIDLANDS & INTERNATIONAL
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01-335 0641-486-0361

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**Earn
£20
-40k**



HAX FREE

ONE-YEAR CONTRACTS IN SAUDI ARABIA

THIS IS AN OPPORTUNITY to join our large team of Consultants already working for ARAMCO. We have more experience than any other UK company in offering contracts in this area, and your application will be treated confidentially and with great care. Should you be accepted, we make all the arrangements for you, right up to the point of installing you in your first-class hotel.

YOU WILL BE WORKING for one of the world's largest oil producers, on large sophisticated computer hardware. This an opportunity not to be missed and a chance to bring your skills up to state-of-the-art level, and earn a lot of money - tax free! There are over 20 places available, and one is tailor-made for you.

YOU WILL WORK IN modern offices, drive the latest model cars on super highways and live in extremely comfortable accommodation, where there is a strong club spirit! (N.B. These are Bachelor Status contracts).

THE BENEFITS PACKAGE INCLUDES:
 ★ ONE YEAR RENEWABLE CONTRACTS
 ★ FREE ACCOMMODATION - including - Swimming Pool, Tennis Court, Gymnasium & Squash Courts, Snooker or Games Room, a few miles from the sun
 ★ FREE RECREATION FACILITIES
 ★ TAX FREE PAY
 ★ AIR CONDITIONED COMPANY CAR
 ★ FREE TRAVEL AND MEDICAL COVER
 ★ SICK PAY
 ★ FREE HOTEL ACCOMMODATION - Air conditioned, single occupation rooms, telephone, colour television, private bathroom

THE JOBS - STARTING DATES ARE FROM MARCH TO JUNE

PROGRAMMERS & ANALYST PROGRAMMERS

Up to £22,500

★ Three to five years' experience in PL/I, TSOS/PF, IMS/DB

★ IMS/DC & ADF advantageous

SENIOR PROGRAMMERS/DESIGNERS

Up to £25,000

★ Seven to ten years' experience of PL/I, TSOS/PF, IMS/DB

★ IMS/DC & ADF advantageous

SYSTEMS PROGRAMMERS

Up to £22,500

★ Three to ten years' (minimum) experience of DEC/VAX

SYSTEMS ENGINEERS

Up to £28,000

★ VAX hardware and software

Interface to IBM/VAX

SENIOR ANALYSTS

Up to £20,000

★ 10 years' experience

★ IBM background

★ User interface

★ Miniature experience advantageous

★ Long range planning experience

ANALYST PROGRAMMERS - MAINFRAME/MICRO

Up to £22,500

★ To convert applications to run on IBM PC

★ Micro-interface experience,

programmable units

★ IBM VMS, TSOS/PF experience essential

For an application form and information booklet, ring TDDY on 01-222 6722 and ask for CHRISTIANA LEE quoting reference HAX or alternatively return our FREEPOST coupon in our other advertisement on this page.

CONTRACTS

All these... Now

IBM

Location	Skills Required	Position	Prog/Analyst
Oxfordshire	IM8-DB/DC TSO/SPF PL/I MANUFACTURING BACKGROUND	Analyst/Prog	Analyst/Prog
Middlesex	MANUFACTURING BACKGROUND	Analyst	Analyst
Bucks	DOUBLING CICM VSAM POWER	Systems Prog	Analyst/Prog
Bucks	VSAM DB/DC PERSONNEL	Analyst/Prog	Analyst/Prog
Bucks	DOSS/P PL/I CA-SARL	Analyst/Prog	Analyst/Prog
Surrey	IM8-DB/DC COBOL	Programmer	Programmer
Middlesex	TWO-THREE YRS EXP IN DB/DC + IMS AND MVS	Analyst/Prog	Analyst/Prog
Herts	OS/MVS ASSEMBLER	Analyst/Prog	Analyst/Prog
Hampshire	OS/MVS PL/I IM8-DB TSO/SPF	Analyst/Prog	Analyst/Prog
Hampshire	OS/MVS PL/I SPFE/JCL	Analyst/Prog	Analyst/Prog
Hampshire	OS/MVS PL/I IM8-DB/DC	Analyst/Prog	Analyst/Prog
London	DATA DICTIONARY/SPFE	Programmer	Programmer
London	IBM AND UNIVAC EXPERIENCE	Analyst/Prog	Analyst/Prog
London	COBAL TSO/SPFE	Analyst/Prog	Analyst/Prog
London	IBM SERIES 1 RMS ASSEM	Programmer	Programmer
London	IBM MARK IV TSO/SPF	Programmer	Programmer
London	OS/MVS 30XX COBOL	Programmer	Programmer
London	COBOL CICS-COMMAND DL1/IMS	Programmer	Programmer
Kent	DOS/VSE VM (VTAM)	Analyst/Prog	Analyst/Prog
Norfolk		Systems Prog	Systems Prog
Kent + Sussex	PASCAL REAL TIME		

ICL

Locations	Skills Required	Position	Skills/Position
Oxfordshire	ICL 2660 DME COBOL PLAN 03	Programmer	SYSTEMS 25 CONSULTANT WITH NETWORKING
Bucks/London	2600 IDMS TPMS VME	Prog/Snr Prog	COMS EXPERIENCE AND ASSEMBLER
London	ME20 COBOL IDMS	Progs	IDMS DESIGNER TO INTERFACE WITH A
London	ME20 TIME TP	Tech Support	PERSONNEL SYSTEM ON 2600
Bucks	SYS 25 ASSEMBLER	Specialist	SOFTWARE AUTHOR MIN TWO YEARS' EXP
S. Wales	2600 COBOL VME IDMS TPMS	Prog + Prog	SNR PROD WITH DEPT 25 APPLICATION EXP
Bedfordshire	2600 OMAC VME IDMS TPMS	Teletext	VME TEST + VALUATION SPECIALIST
Bucks	TPMS IDMS 2600	Progs	TECH SUPP CONSULTANTS IDMS TPMS TO
Bucks	0RS28 PASCAL (+-8000/8 ASS)	Designers	SUPPORT AND IMPLEMENT CONVERTED SOFTWARE
Birmingham	DOUBLE SHIFT + TECH SUPPORT	Designer/Implementor	PROJECT MANAGER VME + VARIOUS ICL
Bucks	OFFICE SOFTWARE	Team Leader	PACKAGES 2600 COBOL
Bucks	OFFICE SOFTWARE	System Tester	PROG TESTER COBOL, PASCAL AS + DATABASE
Bucks	ME20 COBOL PASCAL -	Support Consult	EXP ALPHA AND BETA TESTING
Bucks	ME20 TIME TP	Anal/Anal Prog	FIRMWARE WRITER IN INTEL OR ZILDO
Bucks	ME20 COBOL VME	Programmers	SOFTWARE PRODS DHS PASCAL X2 COMMIS AND
Bucks	ME20 TIME TP	Anal/Anal Prog	SDLC DESIGN EXP PERIOD
Bucks	ME20 COBOL VME	Programmers	VME DESIGNER FOR OFFICE SYSTEMS
Bucks	ME20 TIME TP	Anal/Anal Prog	SIMULATION SPECIALISTS ESP + SEL32 EXP PERIOD
Bucks	ME20 COBOL VME	Programmers	NUMERATE IN ELECTRONIC SIGNAL
Bucks	ME20 TIME TP	Anal/Anal Prog	PROCESSING REAL-TIME APPC/R 60 OR
Bucks	ME20 COBOL VME	Programmers	FORTRAN/MARVELLA SIMULATION/MATH
Bucks	ME20 TIME TP	Anal/Anal Prog	MODELING/PERFORM EVAL/COMPUTER GRAPHICS
Bucks	ME20 COBOL VME	Programmers	SOFTWARE ENGINEER
Bucks	ME20 TIME TP	Anal/Anal Prog	RF/CIRCUIT DESIGNER (ANALOG) - EXPERIENCE IN
Bucks	ME20 COBOL VME	Programmers	MICROWAVE OR HF, RADAR RECEIVERS, RF
Bucks	ME20 COBOL VME	Anal/Anal Prog	TRANSMITTERS ETC.
Bucks	ME20 COBOL VME	Programmers	ATE SOFTWARE DESIGN OR MILITARY COMMS
Bucks	ME20 COBOL VME	Anal/Anal Prog	HARDWARE DESIGN ASSEMBLER + ANY MICRO

Other

Location	Skills Required	Position	Skills Required
Bucks	EX OF WRITING USER MANUALS	Software Author	S38 RPG III FRENCH SPEAKING
Bucks	DOCUMENT ARCHES FROM	Hardware Author	IBM DOS/VSE CICS VSAM TOTAL
Hampshire	VIEWPOINT	Author	SHADOW ASSEMBLER
Hampshire	DEC/COBOL CORAL GRAPHIC	Programmers	DEGREE PREP - FIVE+ YRS EXP -
Hampshire	OR MESSAGE SWITCHING	Project Leader	MESSAGE SWITCHING EXP OF
Middlesex	POP 11 COBOL RAX/TIM	+ Team Leader	NOZ EX/ADT - 1000 OR C-1 EX
Middlesex	REAL TIME BACKGROUND	Programmer	SWITCHES
Middlesex	DO BASIC	Programmer	THREE-FIVE YRS PL/I TSO/SPF -
Middlesex	DO DEBUGGING EXP	Anal/Anal Prog	IMS EXPERIENCE ADVANTAGEOUS
Middlesex	DO ASSEMBLER ACS/VS OR ACS	Anal/Anal Prog	SEVEN-TEN YRS PL/I TSO/SPF -

Minis/Micros

Locations	Skills Required	Position	Skills Required
Midlands	VAX VMS FORTRAN	Analyst/Prog	S38 RPG III FRENCH SPEAKING
Midlands	VAX VMS COBOL	Analyst/Prog	IBM DOS/VSE CICS VSAM TOTAL
London	VIEWDATA SYSTEM	Analyst	SHADOW ASSEMBLER
London	MICRO BACKGROUND	Hardware Eng	DEGREE PREP - FIVE+ YRS EXP -
London	GRAPHICS BACKGROUND	Programmers	MESSAGE SWITCHING EXP OF
London	DATA BASE MACRO PASCAL	Analyst	NOZ EX/ADT - 1000 OR C-1 EX
London	INTERVIEWS ADOS PL/I OR	Analyst	SWITCHES
London	COBOL GRAPHICS	Analyst	THREE-FIVE YRS PL/I TSO/SPF -
London	PL/I, TSOS/PF, DB JCL, etc.	Analyst	IMS EXPERIENCE ADVANTAGEOUS
London	PL/I, TSOS/PF + Fortran	Analyst	SEVEN-TEN YRS PL/I TSO/SPF -
London	IPL ON DEC SYS 10	Analyst	IMS-DC - IMS & ADF

01-222 6722 quote REF C012

...and more

- Database Analyst Programmers Up to £20,000 p.a.
- Database Mktg & Sales essential
- Five years' overall DBMS experience required
- Analyst Programmers - Mainframe/Micro Up to £22,500
- To convert applications to run on IBM PC
- Micro-interface experience, programable units
- IBM VMS, TSOS/PF experience essential

For an application

form and information booklet, ring TDDY on 01-222 6722 and ask for CHRISTIANA LEE quoting reference C012 or alternatively return our FREEPOST coupon in our other advertisement on this page.

2020 VISION FOR REAL TIME GRAPHICS

Ramtek has been pushing forward the frontiers of computer graphics since it introduced the industry's first VLSI colour system in 1971. Current applications encompass business graphics, imaging, CAD/CAM, process control, command control, cartography, simulation, scientific geological and medical imaging.

The new Ramtek 2020 uses the latest advances in VLSI technology and pipeline architecture to set a new standard for colour graphics display generators - up to 35 times faster than conventional raster scan systems.

Senior Customer Engineer

\$11.5K + 2 Litre Estab.

Ramtek's UK Engineering team need a Senior Customer Engineer to build-up their excellent field support function.

With responsibility for design, field and preventive maintenance services throughout the U.K., applicants should be based within two miles of Basingstoke (relocation possible).

Applications are invited from Computer Engineers with 2/3 years experience of mil/micro (preferably CAD/CAM) systems who would enjoy the rewards of working in a dynamic environment.

For an application form call 01-637 9811

MANAGEMENT & EXECUTIVE SELECTION

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9811

Contracts in America!!!

\$40,000+ per annum

We have been retained by a major company in the United States of America to supply 30 experienced computer programming personnel for 12-month contracts. The locations are varied but include Baltimore, Boston, Washington, Chicago, Philadelphia and New York. Prospective candidates should be available to start any time between now and June 1984. The skills required are:

- ★ IBM COBOL IMS and ADF
- ★ IBM COBOL with IMS DB/DC
- ★ IBM PL/I with IMS DB/DC
- ★ IBM MARK IV
- ★ HONEYWELL GCOS COBOL with DM IV
- ★ ICL or IBM IDMS with COBOL
- ★ UNIX and C

An excellent package is offered and will consist of the following:

SYSTEMS AND PROGRAMMING

DATAPPOINT - UNLIMITED OPPORTUNITIES CITY/BERKS

£10-12,500

My client is a prestigious UK financial services organization with worldwide links. Due to its continued success they now require suitable candidates to join their London and Datapoint Division. Career progression opportunities are unlimited and if our prides to provide you with the skills and experience you need, challenging and stimulating environments will be rewarded with an excellent package and first class working conditions.

EW/3962

NCR ANALYST/PROGRAMMER LONDON/MIDOX BOROERS

£11,000

My client is a national retailing establishment, and is seeking an analyst/programmer with at least two years' relevant experience and data processing experience in a mainframe environment. The job will involve extensive user liaison and gives every opportunity to develop your analytical and design skills to the full. A full range of benefits and a structured career path are offered to staff, and generous conditions.

EW/4420

ICL ME28 PROGRAMMER/JUNIOR ANALYST MIDX

C. £8,500

My client, an internationally known household name, now have a small D.E. department for programmers with 18 months' experience of ICL COBOL and a good commercial background. The company also wish to hear from a well educated individual who has a desire to work in a fast moving environment. You will have some exposure to systems, in a business or commercial environment, and preferably knowledge of programming. The right candidate will be offered excellent long term career prospects.

EW/4420

BURROUGHS - LARGE SYSTEMS HERTS

C. £10,000

Based in Central Hertfordshire, this established unit is seeking an experienced programmer to move to a management oriented environment. If you have a minimum of two years' COBOL on medium to large Burroughs machines and would like to progress a step forward into analysis and user contact, this could be the place for you. Why not call for further details.

EW/4418

PROGRAMMER/ANALYST IBM DEVELOPMENT ESSEX

TO £10,000

Due to this company's expansion plans for 1984 a position has been created for an IBM COBOL programmer/analyst to be involved with the development of financial sales and marketing systems. This is an ideal opportunity for someone who wishes to move into a management role. An IBM DOS/VSE background is essential and CICS experience would be desirable, however, training can be provided. The company offer an excellent range of benefits including flexitime and staff restaurant.

EW/3963

HONEYWELL PROGRAMMERS CITY

TO £10,000 + mortgage

This prestigious national financial services organization is seeking to recruit a number of self-motivated individuals to join their expanding team. They are looking for people with up to 5 years' experience in COBOL, PL/I and assembly language, plus experience of machines supporting an extensive network of TDS terminals. As they are looking towards major development plans, they are seeking programmers at all levels, with a minimum of two years' relevant experience. COBOL, PL/I, assembly language and TDS. In return a competitive salary, mortgage subsidy, travel allowances, and an exciting and challenging career opportunity.

EW/4421

IBM COBOL - CICS TRAINING! LONDON

TO £13,000

A host of new projects has created the need to set up a new development team within this Central London based firm. Kit includes JON-4941, DOS/VSE, VA/CMS with CICS and DL/I, and VMS. You will be required to maintain existing systems, write new COBOL, DOS/VSE, and the ability to learn new techniques, extend your analysis skills and get in at the start of planned expansion. Full training can be provided in CICS and DL/I, and benefits include annual bonus, flexitime and travel allowance.

EW/4404

These positions are just a brief selection from our extensive database of jobs in London and the South-East. If you cannot see a position advertised for your particular skills, or are considering relocating or a change of hardware, a quick 'phone call will put you in touch with a consultant specialising in your field. 70% of jobs in this industry are never advertised. Why not let us tell you about some of them? We look forward to hearing from you.

Brushfield House, 12 Brushfield Street
Bishopsgate, London EC2A 6AN
Telephone: 01-247 3356 (24 Hours)

(8526) COMPUTER PERSONNEL CONSULTANTS

ENGLEDOWN

PAPUA NEW GUINEA

Applications are invited from suitably qualified and motivated persons for this senior management position with the Data Processing Advisory Section. This section provides technical advice to the Government on all areas of Data Processing; advises departments on technology systems appropriate to their needs and plans, and co-ordinates development of EDP.

MANAGER DATA PROCESSING

SALARY K22,520 (£17,500 p.a.)

Qualifications - University Degree, 10 years' data processing experience covering a wide range of hardware and software, to include microcomputers and EDP, plus a consultancy background.

Salaries are payable in Papua New Guinea Kina. The Exchange Rate varies from time to time, but on March 14, 1984, it was £0.78=K1.00.

BENEFITS

Three-year contract, 24% Gratuity of annual salary. Free married/engagement accommodation. Air fares to and from Papua New Guinea. Six weeks' annual leave. Generous Education Subsidies.

Please write or telephone for application forms and further details, quoting Reference Number VIS/PSC/1, to Recruitment Department, Papua New Guinea High Commission, 14 Waterloo Place, London SW1 4AA. Telephone 01-530 0922. Telex 25827 KUNDU.

Closing date for applications April 5, 1984.

The IBM SYSTEM 34/36/38 Recruitment Specialists

RPG II COMPUTER SERVICES MANAGER FOR IBM SYS/36 SITE TO £14,000+ RELOCATION EXPENSES S.E. COAST

My Client (part of a multinational Group) designs and manufactures state-of-the-art electrical and electronic equipment. Continuous investment in the latest design and manufacturing techniques ensures their reputation as world leaders in their field. Employing approximately 550 staff they enjoy a multimillion pound annual turnover.

The SYS/36 newly installed is utilizing a range of computer based control systems in manufacturing, marketing and financial area.

The computer services manager is a newly created position involved in all aspects of design, analysis and programming. The candidate will require a sound understanding of how a company is organised and operated, its procedures and controls. Managerial experience in a manufacturing environment with broad experience in several functions would therefore be desirable.

The responsibilities will include a phased withdrawal of bureau services and a plan for the introduction and purchase of packaged software including MAAPCS. As packages improve and new packages are introduced you will advise and explain the benefits involved. An understanding of micro's and proposing the need to acquire more in this range whilst maintaining a cost effective balance to the SYS/36.

This is a vital role in a friendly and progressive company where skills of communication with users at all levels will be necessary. Flexibility and the ability to view the appointment as being a member of a team incorporating all user departments and their needs is essential.

For further information please call Richard Milsum on 01-354 1055 during office hours or 01-988 2853 evenings and weekends.

MARCH COMPUTER RECRUITMENT LTD

(8473)

Senior Database Designer

"to make a major personal contribution to detailed technical design" up to £15,000

Central London

Sainsbury, the UK's leading food retailer, has an outstanding record of profitability and growth. Our success is based on the quality of our products, our service and most of all - our staff.

In an organisation which each week sells more than 7,000 product lines to 6½ million customers buying 125 million items... systems are vital to our on-going business. Our present configuration comprises IBM 3038 and Atlas 10 mainframes and we have a major commitment to a significant on-line database systems programme covering distributed stock control, purchasing and management information systems.

We now seek an additional DP professional to join our database design team and become involved in all aspects of detailed technical design as well as advising on technical issues.

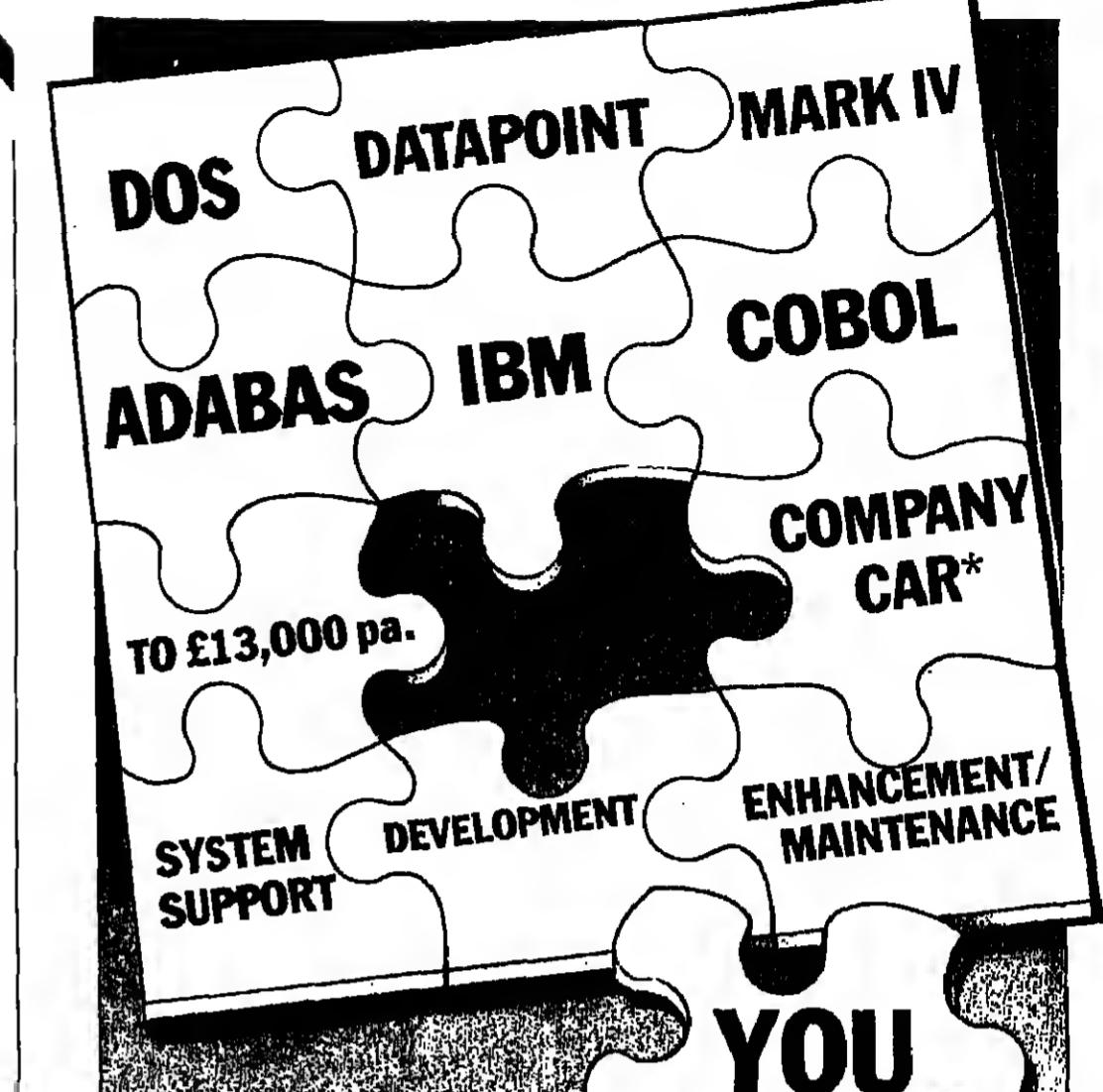
You should have a solid IBM background and at least 2 years' experience in the design and implementation of DL/I under CICS or IMS DC. Experience of performance monitoring and IDC would be an advantage.

Excellent benefits include:

- interest free season ticket loan
- subsidised restaurant
- profit share after 2 years
- share option scheme after 3 years
- BUPA
- relocation assistance, where appropriate

For an informal discussion please telephone Dave Anderson, on 01-9217323. Alternatively please write with a detailed c.v., or telephone for an application form to Lorrae Catherides, J. Sainsbury plc, Wakefield House, Stamford Street, London SE1. Tel: 01-921 6047.

SAINSBURY'S



Development or Support Programmers complete the picture.

A number of opportunities exist for programming professionals at all levels who have made a specialisation out of system support, maintenance, enhancement or development.

Applicants will either be in permanent employment at the moment, or be a Contractor who wishes to return to the security and career development that permanent employment offers.

Our client is a successful and profitable international company, working in the commercial sector. It has a wide range of computer power, including IBM and IBM compatible mainframes, a Prima 550 and a substantial network of Datapoint minicomputers. There are a substantial number of live systems, both of a corporate nature and specialist systems to the business.

Applicants who wish to work in this area must have a background covering no less than three of the following:

- * IBM
- * ADABAS
- * DOS
- * RAMIS-II
- * MARK IV
- * CICS
- * DATAPoint
- * VM
- * COBOL
- * DATABASE

The work is technically challenging, and rewarding. Starting salaries are up to £13,000 and for certain of the positions, a company car is offered. The positions are based on the North West London/South Hertfordshire border and are accessible via the M25, M1 and the A1 roads, making it convenient for London and the Hertfordshire countryside.

Further details on the company, and an application form will be sent by ringing the telephone number below or by completing and sending the coupon.

For the above opportunities:

Please send Application Form and Company Profile to: 0421

Position applied for:
Surname _____
First name _____
Full address _____

Home tel. _____
Work tel. _____

Ext. _____

your appointments register

Programmers

NCR/IBM/COBOL to £15K
Insurance Banking London H. Counties N. Eng.

COBOL/PL1/OS/CICS/IMS to £13K
Commercial H. Counties - Midlands - Manchester

PROGRAMMERS to £12K
DATAPOINT Banks

ICL/COBOL to £12K
Two years' commercial experience Notts

DEVELOPMENT PROGRAMMERS to £14K
CP/M + DEC Herts

RPC 2/3 to £14K
Minimum one and a half years' experience Northants/Leicester/London/N.E.

SYSTEMS PROGRAMMERS MVS CICS to £17K
Systems experience Middx

BASIC/ASSEMBLER to £15K
Mini/Micro Computers London

DATAGENERAL to £11K
Business Basic Kent

APPLICATIONS PROGS COBOL "C" and Unix to £14K
London

Analyst/Progs

RPGII to £15K
Long contracts Nationwide

IBM 34/38/4341 to £15K
London/H. Counties/Leicester

HP3000/280 to £14K
Assembler Micro Processor Based Applications Middx.

MS/DOS to £16K
"C" Datcomme experience Middx.

Hardware/Support

TECH. SUPPORT MANAGER to £16½K + CAR
IBM DDS/VSE CICS IDMS Kent

SERVICE ENGINEERS to £12K
DEC exp. London

SOFTWARE SUPPORT ENGINEER to £14K
FORTRAN essential Middx

CUSTOMER SUPPORT to £15K
APL background essential Middx

DEVELOPMENT ENGINEER to £14K
Video Terminal Manufacture Middx

TECHNICAL SUPPORT to £12K + CAR
IBM installations Nationwide

You can be sure of hearing about many opportunities like these, U.K. and abroad, when you make Sloangate your first choice. Take the next step in your career with us!

telephone 01 549 9236

Sloangate
Appointments Register

Systems Analysts

SPERRY 1100/FORTRAN to £14K
DATABASE Techniques Herts

CAD/CAM to £16K
Real time Modelling Man/Essex/South West

IBM/BURROUGHS to £15K
Commercial Accountancy London/Surrey/Manchester

BASIC plus/PDP to £11K
Tunbridge Wells

IBM/ICL to £14K
Commercial Applications London/Midlands

ICL 2908 to £11K
COBOL Dorset

Software Engineers

CORAL/PASCAL/MASCOT/C to £15K
Communications Glos/H. Counties/Midlands/Blackburn

REALTIME to £15K
Experience in embedded Micro-Processor and M.O.S. Devices Berks.

MILITARY SYSTEMS/RADAR to £17K
Coral - Mescal Herts/Surrey/Ess/S. West

POP/VAX/INTEL to £16K
High Level Assemblers In Derby/Surrey/London/Kent

FORTRAN 77/ASSEMBLER to £16K
Coral/Mescal/APT/Communications/Protocol Avon

HP3000/INTEL to £12K
CAD/CAM/ATE Home Counties

Z80/ASSEMBLER to £11K
Bi-Lingual Terminus/Emulation Surrey

Snr Appointments

INTERNAL SALES ENGINEER to £12K
Micro Development Data products, Logic and Datacom Analyzers Middx.

SALES EXECUTIVES to £30K
Mainframe Nationwide

CONSULTANTS to £18K
CAE/CAM NATIONWIDE

SYSTEMS MANAGER to £15K
Networking Systems and Communications MODES Datapost ARC Manchester

SALES EXECUTIVES to £20K
Turnkey Systems Nationwide

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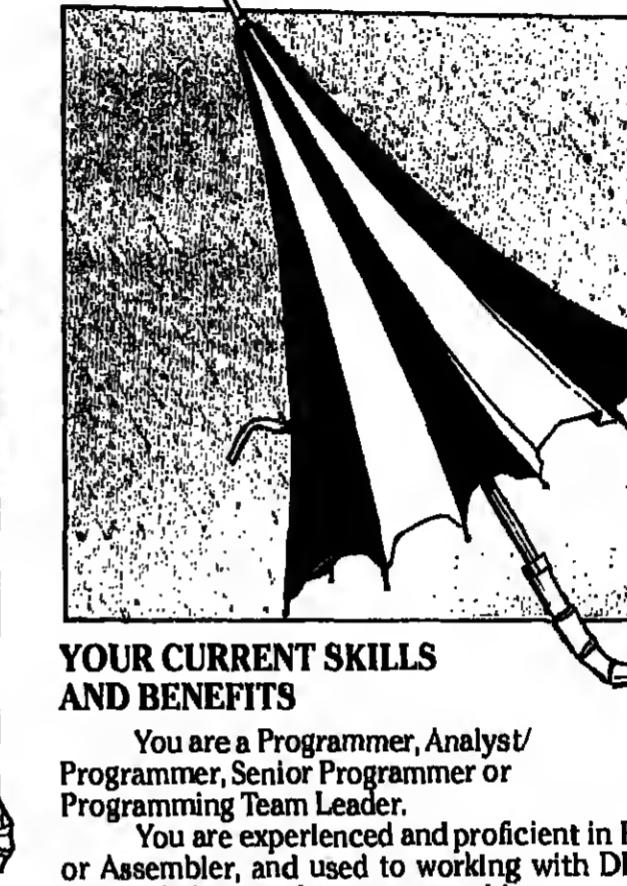
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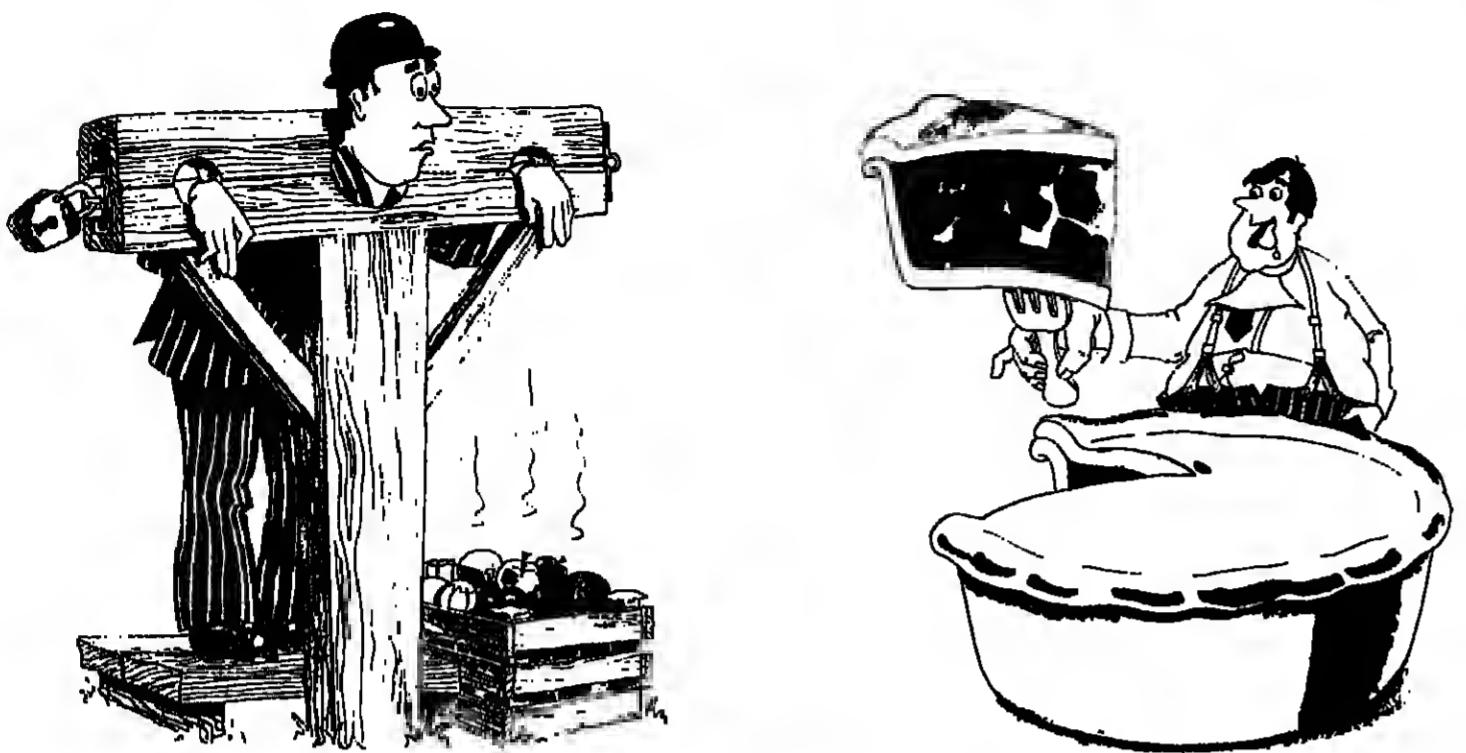
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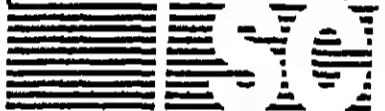
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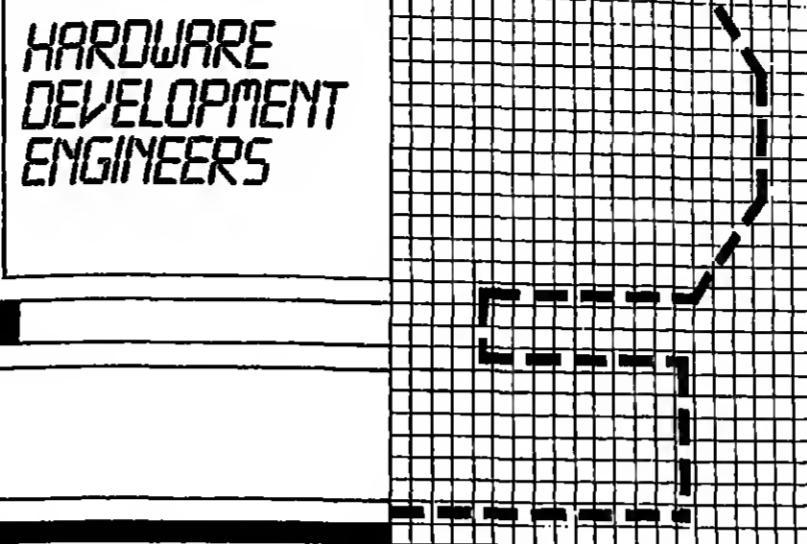
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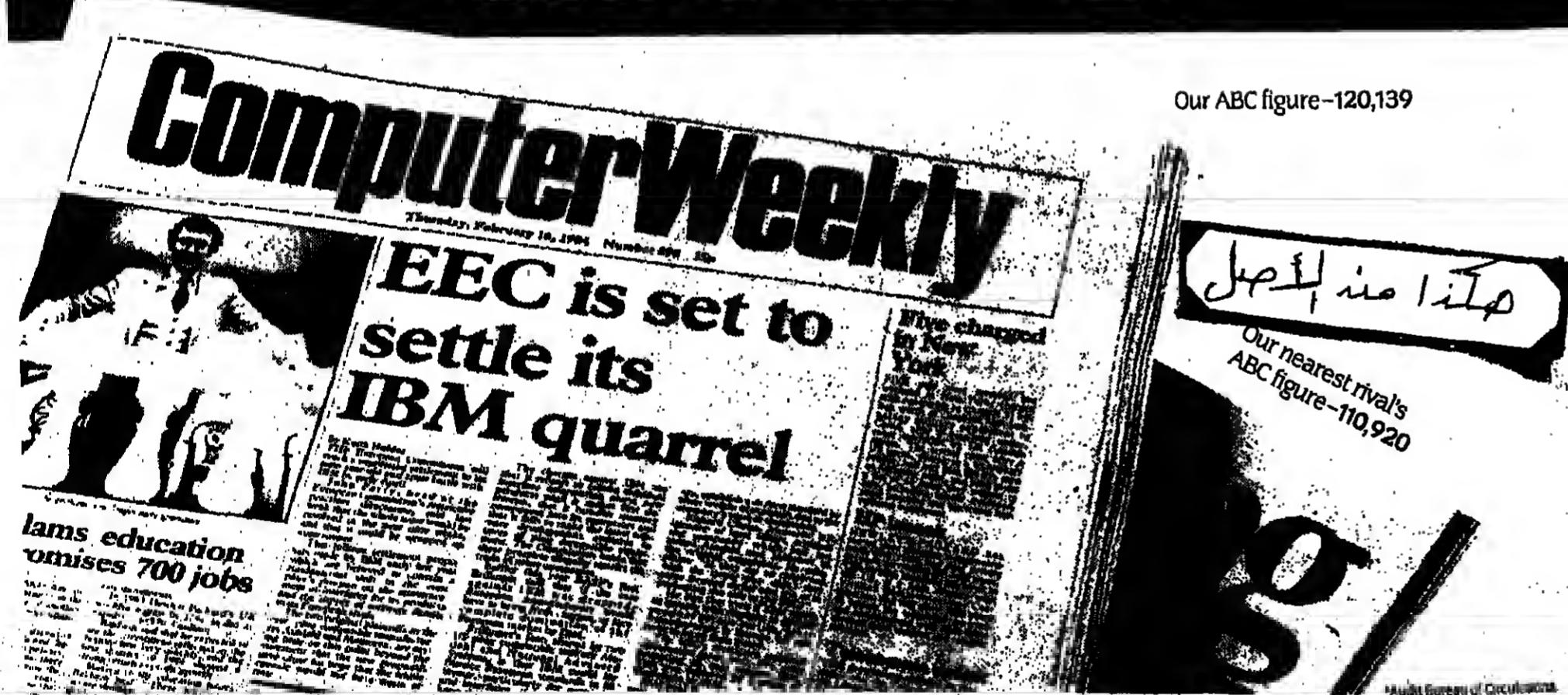
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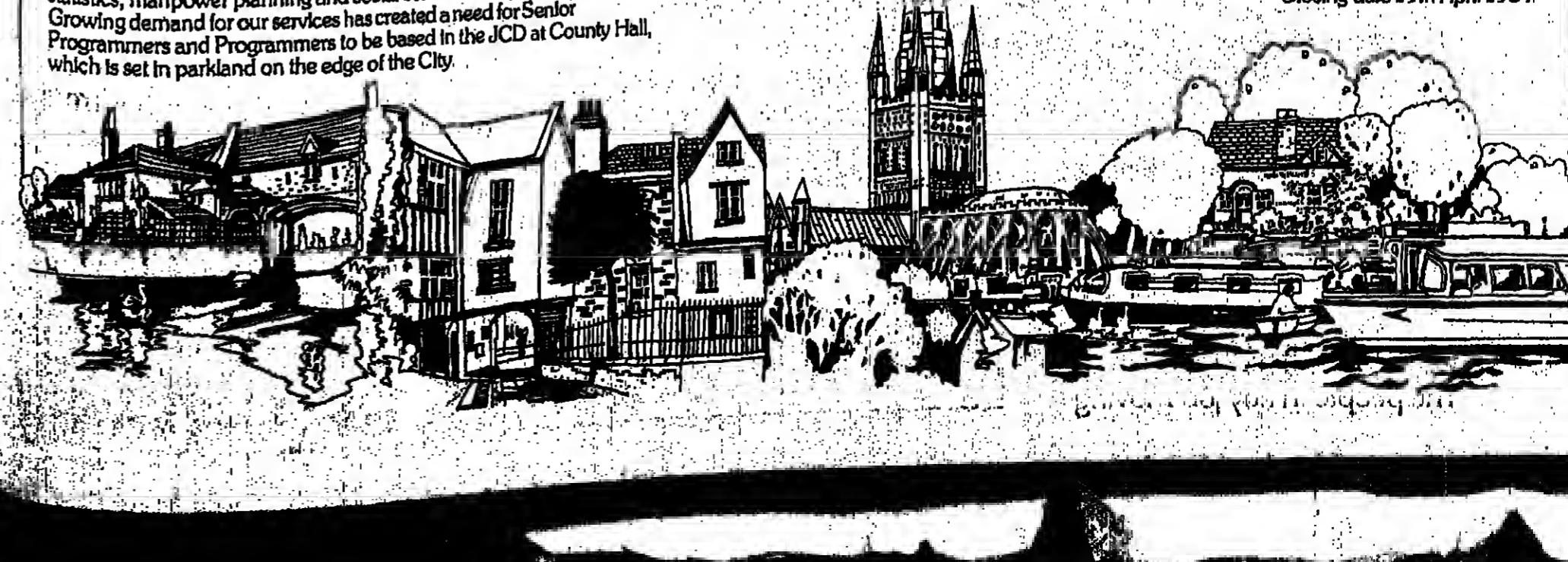
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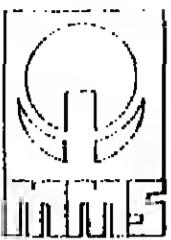
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For further information call Keith Taylor at our Reading office or write enclosing full c.v.

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HARDWARE DEVELOPMENT SPECIALIST**circa £11K + Bonus + Benefits**

As a result of the company's growth, we are seeking a bright and competent individual to develop micro related hardware within a small but extremely professional team. Candidates must have a good grounding in electronic engineering, show a practical knowledge of micro processors and a working knowledge of software.

Ideally, the candidate will already have experience in disk drives and controller technologies. In a similar environment, but consideration will be given to candidates working in a peripheral/systems company in a field service environment.

This position offers an exciting challenge and the opportunity to become an integral part of a successful and expanding company.

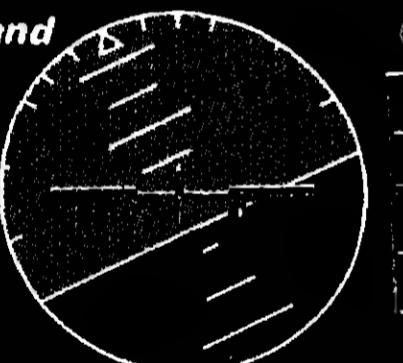
For further information call Barbara Alan at our Reading office or write enclosing full c.v.

MCL
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Our client Micro Memory Systems is dedicated to the development of high technology peripheral products, and is one of the most successful distributors of computer peripherals and micro related disk subsystem products in Europe. As part of their expansion programme, they have opened a new subsystem production and assembly centre based close to Junction 12 on the M4.

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£13,000
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Is it working on the latest technological development, or using creative ability to design successful and envied products, with future aircraft design?

We believe we have the answer to software engineers' dreams, with their need to utilise state-of-the-art design tools, and their desire for recognition.

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environment, your excellence will be exploring and pioneering new design using your industrial expertise and expertise.

Using primarily CORAL 66, Mascot, Pascal and possibly ADA, you will be developing systems incorporating Intel's range of micros including the latest series 80186/286.

With consistently competitive salaries and one of the finest benefits package available, including relocation, you can expect to target your career well into the future.

Please telephone Nicholas Marsh on 01-637 9611 or send your C.V. to:

MANAGEMENT & EXECUTIVE SELECTION

THE IBM SYSTEMS 36/38 Recruitment Specialists
NEW RPG III SITE
NORTH LONDON
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TO £13,000 + BENEFITS
TRAINING GIVEN FROM RPG II

My client is a market leader in the manufacture and distribution of catering products. With a multi-million pound annual turnover they are recognised throughout the industry for both quality and reliability.

As an experienced analyst/programmer you will control the day to day running of the department with three personnel reporting to you. Responsibilities will include maintaining and developing existing programs and developing new systems for both short and long term requirements. As a professional you will be contributing to future growth and success. As a member of a team playing an important role within the company.

You will need to be self-motivated and able to work without supervision. Good communication skills are essential with the ability to be diplomatic with users at all levels. Every opportunity will be given to develop your technical ability with training courses.

For further information please call Richard Millum on 01-354 1058 during office hours or on 01-958 2553 in the evenings or weekends. Alternatively please send full details to:

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MICROPROCESSOR ENGINEERS

A small manufacturer of microprocessor-based industrial peripherals, 30 km south of Munich, seeks enterprising person to undertake all aspects of development. Work will include hardware and software design, documentation and customer liaison. A willingness to learn German is essential.

Write or phone: David Coeks, GERCOM GmbH, D-8102 Gersthofen, Egerlandstrasse 100, West Germany; tel: 01044-8171-3007.

Move Into Pre and Post Sales Consultancy

Large Scale Datacomms/Distributed Data Processing/ Office Automation Projects

Central London/Birmingham

solutions. Subsequently you will be involved in putting forward proposals, presentations, systems design, system implementation and commissioning, training and post sales support.

You should have significant experience of some of the following activities: design, development and implementation of data communications systems and networks; design and implementation of interactive terminal systems; selection/specification of associated items such as: processors, printers, terminals, modems, multiplexors, interface modules; training of end user personnel. From this you will have gained a good knowledge of communications protocols, circuit standards and operations, front end processor systems and their operation, TP monitors, modems - principles and operation.

Candidates who are free and willing to travel extensively should contact Ian Goldsmith on 01 935 0871 during office hours; or 01 959 7132 evenings and weekends; alternatively submit a comprehensive career resume to our London office.

Circa. £13-17K plus car

We are a recently formed division of a massive UK blue chip company, created specifically to develop our client's larger scale computer projects. One of the first of these is a complex data communications/DDP/office automation network which promises a technical feast for the initiated. Because we are a new division your skills will be a major factor in our success. You will have real influence and be able to quickly increase your personal status as the division grows.

Your activities will be immensely varied, with an emphasis on understanding and interpreting our client's needs and assisting our Senior Sales Executives in recommending appropriate

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021-238 3761

NORTH
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Manchester M3 3EE
061-833 0427

BELGIUM
Avenue Louise 327,
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HOLLAND
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1071 H.M. Amsterdam
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**CAREER OPPORTUNITY WITH
LEADING BRITISH MICRO MANUFACTURER**

SYSTEMS PROGRAMMERS

£8.5K to £13K

We offer a rare opportunity to live in Oxford and work with a team of experienced systems designers, developing our next generation of computer and instrumentation products.



Our current very successful microcomputer family includes a state-of-the-art network system and new developments will make use of 16 bit processors and gate array technology. Our products are designed to maintain our reputation for high standards of quality and reliability.

Precious experience should include a good degree and at least two years' experience of systems software development in industry. Experience of assembler and a high-level systems programming language is highly desirable, as is an understanding of microcomputer hardware.

We offer modern office accommodation and a salary range of £8500 to £13000 per annum depending on experience. An attractive range of benefits include: 25 paid days holiday; free BUPA; life and disability insurance; a pension scheme and generous help with your relocation to this area.

If you are interested in this vacancy please contact Polly Keane on Oxford (0865) 726136 or write for an application form, quoting ref: SP/CW3.

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L/MICROCOMPUTER SYSTEMS

RESEARCH MACHINES LTD • Mill Street, Oxford OX2 OBW. Tel: (0865) 726136

Red Lion Square, London WC1R 4PL

242 9796

Systems Engineer

c£14K.

Woking

At least 7 or 8 years experience in software is essential (of which at least half would have been in Systems Design and Analysis using computer modelling techniques).

Supported by a Programmer you will take responsibility for the design of a functional computer model of a complex real time signal processing system.

CW1201

Software Team Leader

c£12K.

Woking

You'll probably have 4-6 years experience of PDP11 Series or Ferranti Argus/M700, as you take on the responsibility for the design and production of complex real time applications software (running on a small minicomputer) operating as part of an advanced signal processing system. Your responsibility will extend from the initial design on the VAX11/750 host to its transportation to and commissioning on to the Target system.

CW1202

Software Engineer

c£11K.

Woking

You'll have 2-3 years in Software Design using modern structured programming techniques in Assembler and high level languages. The team that you will join will be carrying out software design to requirement specs, and specifying and producing real time software.

CW1206

Senior Programmer

City of London to £15,000 plus benefits

To work for an international bank in the city. Applicants must have knowledge of Data Communications (from the systems programming perspective), IBM systems (preferably under DOS/VSE) and COBOL with CICS. A minimum of 7 years relevant experience is anticipated. Knowledge of IBM assembler and banking applications would be desirable.

CW1203

Senior Sales Executive

£ negotiable

South.

Required for city backed microcomputer company based in the south, specialising in Local Area Networks through distributors and OEMs.

Task to increase customer base in UK, Western Europe, Africa and Middle East, to increase turnover by £1m in the first year. Sound technical knowledge of microcomputers and LANs, fluency in French and German and a numerate ability required. Desired age mid thirties, must demonstrate practical sales achievement and sound career path. Package to include significant incentive, as well as company car, health insurance etc.

CW1204

**Project Managers/Leaders
Analysts & Programmers**

£ negotiable

Slough

Autofile is looking for 15 people. Autofile a fast growing DEC based computer software organisation whose capability with the VAX and PDP-11 has been demonstrated on such projects as the ITV's election computing and a large holiday reservation system requires Project Managers, Project Leaders, Analysts and Programmers familiar with DEC products. Why don't you become part of Autofile's success?

CW1205

Phone 01-549 9236**Sloangate**
The Appointments Register

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TELE: 01841 7 STAR 61

TAX-FREE SAUDI ARABIA**COMPUTER HARDWARE and
SOFTWARE PERSONNEL**

The company is the sole agent in Saudi Arabia for one of the world's leading suppliers of IBM compatible mainframes and peripherals in 4300 to 308X range. It has an immediate need for the following individuals matching the exact requirement, who are:

HARDWARE ENGINEERS

At least three years' experience of installation and maintenance of IBM or IBM DCM in medium to large systems including CPU and other peripherals is required, although right candidates would be product trained. Individuals with better experience and proven leadership record/quality will be considered for senior engineer positions.

**SYSTEMS SOFTWARE SUPPORT
REPRESENTATIVES**

Need to have spent six years in IBM System software environment, the last two years in MVS, VM, CMS, DOS/VSE, in medium to large installation, with especially to support customers in installation, planning, tuning, training, as well as systems software installation and maintenance. Experience in major subsystems, e.g. CICS and VATM will be favoured. Individuals with better experience and proven leadership record/quality will be considered for senior positions.

SALES REPRESENTATIVES

A minimum three years' proven sales experience of IBM or IBM PCM Mainframe is needed. Software background or Middle East market experience will be definite pluses. Individuals with right experience and background will be considered for sales manager positions.

Please forward your c.v.s to Fayez Kahloon et Fissions Limited, 10 Mackay Road, London, SW4 or phone him at 01-827 4683.

Fissions Limited

Computer Consultants

IBM 370 opportunities in Nigeria

2 year contracts

c£32k p.a.+big benefits

UAC in Lagos, Nigeria, is a member of the Unilever Group with a well established IBM 370 installation under DOS/VSE. Rapid company expansion has placed increased and changing demands upon our computer and business systems, so we're re-thinking our entire operation. Which is why we're seeking two well qualified and experienced self-starters for the following opportunities - COBOL, DOS/VSE and other operating systems experience is essential, working in a highly demanding environment.

Software Manager

Your main objective will be to monitor the current operation, strengthen any weaknesses and manage, motivate and train a small team of support programmers. You will also participate in the review of the current hardware facilities and assist in the management and implementation of any developments which result from that review. To meet the demands of the job you should currently be in a management or very senior position within a software team at an IBM installation involved in a wide variety of applications.

Systems Analysts/Analysts

Finally you will be involved in a review of existing systems to determine any weaknesses and establish any omissions. You would then be responsible for implementing any agreed proposals on how those systems should be further developed to meet new requirements.

The training of local support programmers would also come within your orbit of responsibility.

These interesting opportunities offer the chance to work in a fascinating part of Africa, earning around \$4,000 net a year, which at current exchange rates means about £32,000 sterling. You'll also receive an end-of-contract bonus, free air fare, subsidised accommodation, children's education allowances if required and other overseas benefits.

So if you're looking for a big opportunity to capitalise on your experience, you should find out more about these positions. Interviews will be held in London.

Write with brief career details to:

Roger Harvey, UAC International Ltd.,

UAC House, P.O. Box 1, Blackfriars Road, London SE1 9LG.

**Data Processing Manager**

Worcester

c£13,000 + Car

Our client, Morganite Crucible Limited, is a highly successful subsidiary of a major international group. The company, a world leader in its own specialist field of high-technology products, has the support of a progressive and well established D/P function.

Highly advanced commercial and financial DP systems are already in operation and significant development is planned in production and warehousing/distribution areas.

The DP Manager, who reports to the Financial Director, is responsible for budgeting, staffing and day to day control of a department with ten experienced computer personnel. Specific responsibilities include:

- * Systems development and implementation
- * Selection of equipment and software
- * Project planning
- * Feasibility studies
- * Recruitment, training and staff development

The position will suit well qualified systems analysts, project leaders or deputy DPM's in their late twenties or early thirties with several years relevant experience preferably gained in a manufacturing environment. In addition to practical experience, it is essential that candidates have high standards of oral and written expression; proven managerial skills and the ability to play a major role as a member of a Company's management team. A knowledge of large mini-computers and micro-processors would be useful but is not essential.

The position offers an excellent opportunity for career progression in a demanding and professional environment. In addition to an attractive salary, benefits will include a 1st litre company car, bonus scheme and generous assistance with relocation to an attractive rural area.

Suitably qualified candidates, male or female, should write enclosing full career details and quoting reference MCS/8415 to:

Jerry Wright, Executive Selection Division, P.O. Box 120, Livery House, 169 Edmund Street, BIRMINGHAM B3 2JP Tel: 021-236 5011.

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**CHALLENGING OPPORTUNITIES
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IN SAUDI ARABIA****CALL 01-937 6586 NOW**

Our clients, a major US corporation are implementing a large integrated system for military logistics/supply planning at a number of locations in Saudi Arabia and have immediate openings.

Design and Development**Assistant to Development Manager**

This is a new position which has arisen due to the increased workload on the project. You will provide technical support and assistance to the Development Manager in this area of implementation, maintenance and supply. Qualified, you must have 10-15 years' software development experience, 5 years of which should have been at senior level.

(Ref: CSAA)

Lead Programmer and Senior

Programmer

E16-18,000 p.a.
(Ref: CPRI)

Operations and Maintenance**Application Programmers**

Salary negotiable

Design, codes and tests in-house developed computer programmes, must have 5 years' experience in the development of related systems using structured COBOL.

(Ref: CADP)

Maintenance Manager

Reporting to the Development Manager and responsible for a department of 16, you must have a minimum of 12 years' related experience including maintenance software development, RAF software maintenance experience highly desirable. Must have at least 2 years' managing experience in a software development group in a distributed system environment. Qualified with HP 3000 experience highly desirable.

(Ref: CMM)

Technical Support Manager

Reporting to the Development Manager and responsible for a department of 6, you must have 8-10 years' related experience including at least 5 years' in HP 3000. Image and distributed systems experience also required.

(Ref: CTSM)

Salaries for the above positions are negotiable according to qualifications and experience.

Senior Systems Analysts and Systems Analysts

£20-25,000 p.a.
7-10 years' experience ideally in maintenance systems (pref. military logistics) or supply inventory systems. HP 3000 experience highly desirable. (Ref: CSAA)

Lead Programmer and Senior Programmer

E16-18,000 p.a.
(Ref: CPRI)

Operations and Maintenance

Application Programmers

Salary negotiable

Design, codes and tests in-house developed computer programmes, must have 5 years' experience in the development of related systems using structured COBOL.

(Ref: CADP)

Operators

£13,500 p.a.

A minimum of 3 years' experience (must include HP 3000) plus ideally IBM. (Ref: COP)

Employment will be for a minimum of 1 year. In addition to tax free salaries and a completion bonus, excellent benefits include free accommodation, subsistence allowance, generous leave with 3 home paid tickets and free primary medical care.

Please call now to discuss your application. Interviews with our clients will take place week of 9 April

Webb Whitley Associates Limited, International Recruitment Consultants, 45 Kensington High Street, London W8 5ED.

Webb Whitley
Associates Ltd.

**Head of Entertainment Software
Cambridge**

This is an outstanding opportunity to join Acornsoft, the software publishing company within the Acorn Computer Group.

Reporting to the Managing Director, the Head of Entertainment Software will take overall responsibility for running and developing the Entertainment Software Group. The group currently has a budget of £500,000 and a staff of six programmers and program testers, producing board games, arcade games, quiz material and hobby related learning programs.

Key responsibilities include managing and controlling the group, evaluating software, project management, quality assurance and the development of new concepts in entertainment software.

Creativity and experience of entertainment software design are the primary requirements, together with a background of developing commercially successful software products for microcomputers. Education to degree level is desirable.

The benefits package, including an excellent salary, will reflect the importance of this position.

Write with full career details, quoting CN/UL/W, or telephone:
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Clive Newton and Partners, Executive Recruitment Consultants
Business and Technology Centre
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IBM FORTRAN £17,000+

Major engineering company in North London requires a Senior Analyst with an IBM FORTRAN background in construction engineering for software development work in the oil industry. You will be liaising with structural engineers on design problems and be involved in user support.

REF: JM02

NETWORKS/ COMMUNICATIONS TO £14,000++

International organisation in City has a wide range of vacancies in networking, communications and real-time systems utilising DEC PDP & VAX equipment to manipulate data that supports major banks and other commercial industries.

REF: JM03

VAX OR INTEL PROGRAMMERS TO £20,000 TO PROJECT LEADERS

London-based software house has projects in Home Counties and Germany for FORTRAN, PASCAL, ASSEMBLER and CORAL 66 Programmers. The company is involved in all levels of software design for space systems. You will be working on a variety of systems including telemetry control and monitoring, satellite simulation and telecontrol systems, etc. From two years' experience in CAD, circuit design, layout and communications experience is ideally required.

REF: JM04

Tel no. evenings: 01-832 6947



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Exciting new management opportunities with young, expanding software house

PROJECT/TEAM LEADERS to £11,500

Retail/Business Systems

You will be expected to produce both systems and programming specifications and lead small teams in their subsequent development. There will be some client contact but most of your responsibilities will revolve around the day-to-day control of the programming teams; ensuring a strict adherence to standards and procedures. A detailed knowledge of a Business BASIC - particularly DG or MAI - is essential.

In both cases salary will be negotiable in the range indicated, according to experience and ability, and will be accompanied by a full range of benefits. Candidates who do not have the required experience but who could contribute at a lower level - and participate in the growth of a young company - should also apply. Now for an early interview.

PRODUCT MANAGER to £15,000

Retail/POS Systems

Reporting to the Computer Services Manager you will take total responsibility for the allocation of resources and production scheduling within the retail systems area. Additional duties will include assistance in establishing growth patterns, manning levels and improving in-house standards and procedures. Although both DG and ICL hardware are involved, it is more important for candidates to have managerial ability.

DEC COMMERCIAL

VAX PROGRAMMERS SURREY TO £12,000 & ANALYSTS

Private airline has opportunities for BASIC Programmers, with PDP or VAX experience, to develop commercial applications on VAX/VMS equipment. Good prospects for career seekers.

REF: JH15

SENIOR COBOL SURREY £10,000-£14,000 PROGRAMMERS

TO TRAIN ON VAX

Leisure/holiday group requires strong COBOL experience on either mini or mainframe for busy team undertaking crucial development work on multi VAX network. Management skills plus a desire to make an important contribution to designing realtime database systems are useful attributes.

REF: JH18

ANALYST PROGRAMMERS MIDDX £12,000

For system Management of VAX/VMS equipment. Either technical background of VMS or commercial VAX experience is sought by established computer manufacturer.

REF: JH17

MUMPS ON DEC PDP11

8 MONTH CONTRACT - LONDON - ASAP.

REF: JH18

Tel no. evenings: 01-701 5520

COMMERCIAL MINI/MICRO

NCR LONDON £9,000 + BANK PERKS

Bank requires Programmer with minimum one year's NEAT experience, to help rewrite complete system.

REF: JC09

WANG VS LONDON £8,000-£18,500

Several clients, including banks, finance companies, software houses, oil companies, etc., have many positions from Programmer to Senior Systems Analyst.

REF: JC10

H.P. LONDON + COUNTIES £8-18,000

Good COBOL experience on HP3000 ideally with IMAGE VIEW or query required for many positions from Prog to Senior Systems Analyst.

Good perks include relocation expenses and promotion prospects.

REF: JM04

UNIX AND/OR 'C' £9,000-£17,000

Any experience up to Senior Systems Analyst required by various clients, including banks and software houses; many varied applications, various locations throughout the country.

REF: JC12

MUMPS ON DEC PDP11

8 MONTH CONTRACT - LONDON - ASAP.

REF: JH18

Tel no. evenings: 01-858 3884

ENGINEERING ANALYST

C. London

To £16K

Our client, recognised as the world-wide authority in Engineering and construction, have identified the need for an ANALYST PROGRAMMER of a very special calibre.

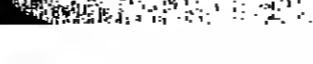
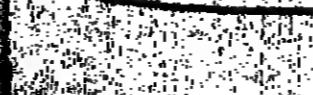
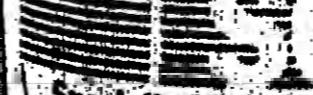
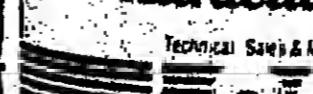
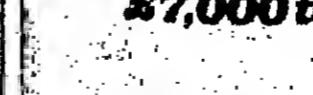
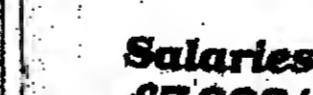
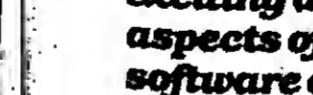
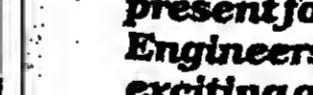
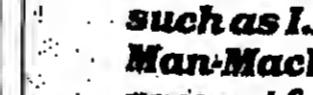
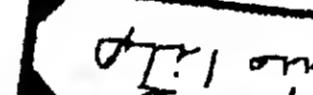
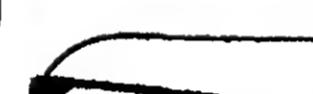
Tasked with development and maintenance of existing systems within a multi discipline engineering environment you will be responsible for the technical quality of systems analysis, programming and documentation of new systems.

To successfully fulfil this task you will bring to bear in this role your expertise in the following:

- ★ Engineering (Process Industry)
- ★ Fortran

- ★ Prime/Primos
- ★ Data Base/Info

For full information, call MIKE GEORGE now!



IBM Systems Programmers

(A chance to work with MVS/XA)

to £15000 plus bonus, plus car scheme

Istel, leaders in the UK software industry, are seeking additional, talented IBM software professionals.

The Company's impressive Data Centre in Redditch, a pleasant area of Worcestershire, just South of Birmingham, provides a multitude of software services to Istel's considerable Client base.

Supporting a nationwide network of DEC PDP and VAX minis and the latest in high technology office and industrial automation services, is a large scale IBM/Amdahl configuration comprising three IBM 3083's (2.4mb each), a 3033 (16mb), a 3033AP (16mb), a 4341 (8mb), four 4331s and a 24mb Amdahl 5850/60.

This impressive array of hardware makes use of various permutations of MVS/SP 1.3, JES2, VM/SP2, ACF/VTAM v.2, DOS/VSE3, IMS 1.2 (DB/DC), CICS 1.5 (under both DOS and MVS), VCN, MSS and RSCS, together with a full range of application languages and plans to implement MVS/XA later this year.

Istel is able to offer enormous scope to skilled IBM Systems Programmers, with a good knowledge of MVS or CICS/VS, who have a desire to take on responsible



Technical Sales & Management Appointments



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SENIOR SYSTEMS DESIGNER

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Car + Benefits

This company is a substantial manufacturing concern located in Greater Manchester and is a subsidiary of a major international British group with a turnover in excess of half a billion pounds.

An immediate priority is to rationalise the company's existing computer systems in accordance with corporate strategy which necessitates the recruitment of a senior systems designer. This position will report directly to London and will have the responsibility for the development, integration and implementation of the new DEC based systems covering all aspects of stock, production and financial management control.

The requirement is for candidates aged 25-35, preferably educated to degree level, with 2-3 years minimum involvement with PDP or VAX in an analyst programming role where a sound applications background both commercial and manufacturing has been gained.

Ideally the successful candidate will have thorough knowledge of database and program generation techniques and more importantly the ability to lead this project from initiation onwards.

A strong personality, tenacity and drive, with the necessary inter-personal skills to relate at all levels, are a pre-requisite to the success of the individual.

The benefits of joining this large and prestigious group will include a negotiable salary, a company car of your choice within pre-defined limits and the real potential to become an important member of the management team in this progressive D.E.C. environment.

To apply for this challenging opportunity please write with full career details, or better still, telephone Angela Taylor for an immediate confidential discussion on 061-833 0846 during business hours. Evenings and weekends until 9.00 pm telephone: 061-865 5754.

INTERFACE
RECRUITMENT & SELECTION CONSULTANTS LTD

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REAL TIME SOFTWARE UP TO £18K + BENEFITS STAINES BASED

We are the Technical Division of an expanding systems consultancy and seek software professionals to lead a further penetration of our existing and new market sectors.

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Senior staff must be self-reliant, consultancy orientated and be capable of high levels of interaction with the sales team to develop new business. We also welcome applications from Systems and Software Engineers with a minimum of three years' relevant industrial experience:-

PDP/VAX GEC 4000
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Mini and Micro experience not covered above may still be relevant. All candidates must be mobile, committed and willing to work at client sites within commuting distance of Staines. Some opportunities for work also exist on the Hampshire coast. Whilst the candidates should preferably live in the A3/M3/M4/M25 belt, relocation packages will be considered at all levels.

Benefits include competitive salary, free PPP, Life Assurance and Pension Scheme, Training Programs and the opportunity to grow with a young and rapidly expanding company.

Please Geoff Dongworth on Staines (0784) 63911 or Barry Kemble on Staines (0784) 58601.
Alternatively phone Geoff Dongworth at home on
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111 S HERMES DIVISION

Systems Analyst & Analyst Programmer South Yorkshire To £12,000 + benefits

We are the Loridan and Scandinavian Metallurgical Company, a member of the Metallurg Group, and a leading producer of metals, alloys and chemicals worldwide. At our site in South Yorkshire we manufacture an expanding range of products serving the needs of the Aluminum, Steel and Superalloy Industries. The growing sophistication of our operations requires a corresponding growth in our Computing Resource.

Ours is a small but growing department utilising an IBM 4331/2 (soon to be upgraded to an IBM 4381) operating under DOS/VSE with CICS, DL1 and UFO. We work with a diversity of users on business and computer solutions to increasingly challenging problems. Future systems development will cover the full spectrum of the Company's business requirements in the Financial, Commercial and Production areas.

Growth is such that we have two posts to fill.

We require a **Systems Analyst** who will play a major role in the design and

implementation of enhanced business systems. Our informal but demanding management structure means that the successful candidate will have a unique opportunity to directly influence the success of computing applications within the Company. Energy, resourcefulness and credibility are what we need, combined with the motivational skills that are part and parcel of the leadership role, especially when dealing with client users.

We also need an additional **Analyst Programmer** who will work closely with the Systems Analyst, but who will be self-confident and flexible enough to work independently on projects. Ideal applicants will have experience of on-line systems development on an IBM mainframe environment, but just as important is the eagerness and spontaneity to react to client needs.

Our advising Consultant is Brian Mitchell. Contact him on 061-491 1666 (work) or 061-485 7798 (evenings and weekends) to learn more about the job and the Company.



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Causeway, Cheshire SK8 2EA • 01-836 6411 Computer People International, VJ House, 68-69 St Martin's Lane, London WC2N 4JS
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The Market Leaders

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People North**

PRIVACY CONTROL OFFICERS
TO £12,000 + SUPERB BENEFITS

You've probably read no end of recruitment advertisements referring vaguely to 'rapidly expanding' networks, but when the Prudential makes such a claim you can be in no doubt of its substance.

As the UK's largest institutional investor, active in almost every financial market throughout the world, our DP facilities are of major importance. We operate an expanding countrywide network, consisting of distributed IBM 8100s and around 700 remotely or locally attached terminals. You'll certainly be facing a stimulating new challenge if you're one of the experienced Network Controllers we're seeking to help plan and implement the operational control functions and the hardware and software changes required by new installations. Using a variety of sophisticated monitoring tools you'll be

expected to analyse problems and plan for them. In short, a big system and a lot of busy users will be dependent on you for continuity. Clearly we're looking for experience in all aspects of controlling the physical and operational layout of a substantial installation and ideally familiarity with a large IBM 8100 distributed network.

You

should be familiar with MVS, ACF/VTAM

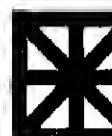
preferably using NCCF/NPDA, and have a good working knowledge of TSO. Formal training will be provided in problem determination and the use of software tools. It need hardly be said that an ability to keep abreast of new developments and communicate with users on their own terms, is essential.

If

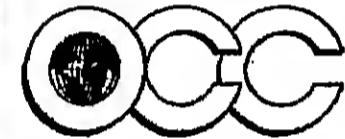
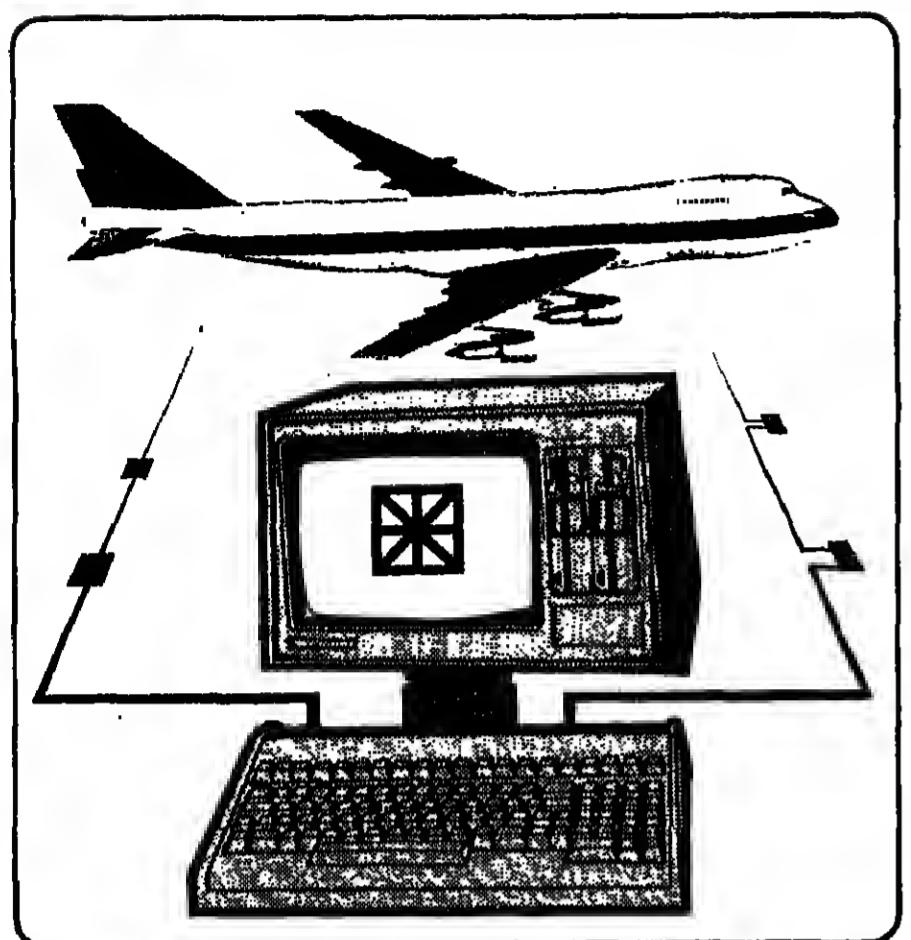
it's true that our specifications for this appointment are precise, but they have to be. Nevertheless, the man or woman who can

match them can look forward to the prospects of a career in a Company renowned for its concern for its staff. In the longer term we can offer opportunities of moving into systems programming or technical support.

Your remuneration package will be enhanced by benefits that include: non-contributory pension, low cost mortgage, subsidised restaurant, generous holidays and active sports and social facilities. To find out more and perhaps arrange a meeting, contact: Ken Pomeroy, Personnel Executive, Prudential Assurance Co. Ltd., 142 Holborn Bars, London EC1N 2NH Tel 01-405 9222 x 2568.



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The company is now able to offer software engineers large turnkey development projects in the fields of

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- ★ High level Protocols (file to file transfer)
- ★ Specialized airline protocols
- ★ Network Management

Candidates should be software engineers with project experience in software development in datacommunications or real time environment or have programming skills in PASCAL

C
ASSEMBLY languages

For further information please contact Brian Harris at O.C.C. on 0270 627206 daytime or 0270 629454 evenings or weekends. Alternatively contact Steve Cook of Christian Rovsing Systems on 0794 869010 or write to him at Gloucester House, 478a Basingstoke Road, Reading.

Contractors – What Will It Be?

£ ---

No – we are not aiming for a mass rates explosion but our clients are in need of freelance programming and analytical support and the remuneration is very attractive.

Naturally, we would be more than interested to hear from any contractor who is now or shortly to be available but in particular our requirements are as follows:

Programmers with PL/I, IMS DB/DC and JSP experience



Programmers with NCR mini/mainframe, IMOS/IRX/VRX, and COBOL experience



Programmers with Univac OS100, DMS, TIP and COBOL experience



Analysts and analyst/programmers with banking/financial systems experience, preferably gained in an IBM mainframe environment.



Our clients are predominantly large organisations in the banking and insurance sectors who have extensive development plans and who offer excellent working conditions.

Please send your CV or telephone Barry Frost.



Airland Computer Resources Ltd
15/17 City Road, London EC1Y 1AA
Telephone: 01 920 0801 (24 hr)

Dot Lic. No. SE 6583

DEC ANALYST PROGRAMMER CITY BASED SHIPPING COMPANY

To £12.5K

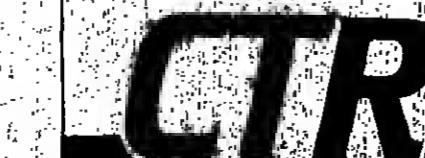


If you're feeling restricted in your present environment, take a good look at what our client, Ellerman City Liners, has to offer. One of the shipping industry's most respected names, they have a complex operation to support, one which will challenge and extend your skills in every way.

As an experienced Analyst Programmer, you will join a highly professional team developing systems on DEC PDP-11's running under DSM-11 (Mumps). You will be responsible for all accounting systems, liaising closely with the users to define and satisfy their needs. Your responsibilities will cover the full scope of the analysis, design, programming and implementation of systems, calling on the aid of external consultants whenever appropriate.

To fulfil this role, a minimum of three years DEC programming experience is required, ideally including Mumps, but full training will be given to Basic/BASIC+ programmers. Coupled with this, analysis experience, good communication skills and the ability to control projects from conception to completion, with a minimum of supervision, is essential.

So, if you are talented, ambitious and enjoy responsibility, set your sights on this career opportunity by calling Jane Emmanuel on 01-734 9723 daytime or 01-771 1000 evenings and weekends.



Computer Technology Recruitment Ltd.
Truman House, 187 Regent Street, London W1R 7WD.

ANALYST/ PROGRAMMERS

Salary
C£9,000 - £11,000+

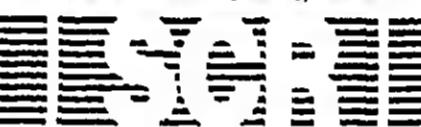
IBM System 38

RPG III/COBOL

European Visits

Nottingham

Technical, Sales & Management Appointments



Specialist Computer Recruitment Ltd

Part of a multi-million pound Group, we are an acknowledged leader in our field and, over many years, have enjoyed an enviable reputation for the quality of our product range.

Based in Nottingham with its inexpensive housing, we have all the advantages of big City life combined with our close proximity to beautiful countryside. The City's cultural and sporting heritage is renowned. Road, rail and air communications with the rest of the Country are excellent.

The Group is totally committed to Data Processing and our IBM System 38 is central to our business activities. We are currently able to offer exceptional opportunities to two System 38 professionals. Successful applicants will require a thorough understanding of RPG III, although experienced IBM COBOL Programmers with GSD exposure and the required levels of technical ability and business awareness will be given formal training in RPG III.

This is a first class chance to become an integral member of a small Data Processing team actively involved in projects from initial user contact to systems specification and design through to programming and implementation. Our standards are high, but we are quick to recognise potential and prospects within the Group are second to none.

The comprehensive remuneration package will include 20 days annual leave, subsidised meals, generous pension and life assurance cover. We will also provide assistance with relocation where appropriate.

For an immediate interview, please contact Jim Mitchell on 021 236 3781 (24 hour answering service) or at home on 021 427 2291 (evenings and weekends until 9 p.m.).

(6509)

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TECHNICAL SUPPORT C. £12,000

Update Computers, a young and expanding systems house, is looking for a capable and experienced person to be responsible for providing hardware support and to help in the further development of its systems.

Applicants should be experienced in maintaining microcomputers, hard disks and other peripheral equipment down to board level. Experience with local area networks would be an advantage.

A successful person could look forward to a larger role within the company.

Present systems are based upon the IBM PC.

Benefits include 5 weeks' annual leave, a non contributory pension scheme and a private health scheme covering the applicant's family.

Central London location.

Contact: Amanda Naylor
Update Computers Limited
33-34 Alfred Place
London WC1E 7DP
Tel: 01-637 4544

DATABASE OPPORTUNITIES

Central London to £13,000

A major U.K. Financial House based near Covent Garden is currently undertaking several significant projects using the latest Database development techniques. To ensure that these are successful, they are now looking for an able D.P. professional who wishes to develop a career in database design and support.

You will be working in a small Data Administration group that supports development project teams, providing expertise on Data Analysis and Database Design and subsequently performance monitoring and tuning. The main database software is IMS/DB with CICS under MVS.

Probably in your mid 20's you will have had 2/3 years experience in either a database support group or in programming with DL/1 based applications. Salary is negotiable according to experience and will be accompanied by a generous benefits package which includes Non Contributory Pension, Group BUPA scheme, subsidised restaurant, and after a qualifying period season ticket, loan and mortgage facilities.

Call David Mason Johnnie TODAY on 01-948 5922 (24-hour answering service) or 01-891 0906 (evenings and weekends) for an interview. Alternatively write to him at the address below. Please quote Ref. 8231/CW.

KPG
01-948 5922

KPG Computer Support Services Limited
Cobden House, Park Lane,
Richmond, Surrey, TW9 2RA



(6508)

Enhancing Patient Care

ENGINEERING OPPORTUNITIES

Northants

Our Client, market leaders in the provision of turnkey systems to interactive graphic and CAD applications, have seen a marked growth in their Client base and are now able to offer two unique career opportunities.

As sole UK distributors of leading interactive systems used across a diverse Client base in industry, commerce and public utility Organisations, the engineering facility is a vital factor in their success. Utilising the latest systems innovations which include VAX, 11/32, H.P. and M6800 technology, and with a planned development policy coupled to continuous evaluation of market and product availability, they fully intend to sustain their established reputation for technical excellence.

To support this, they now seek to appoint two key people into critical positions, in order to further improve the provision of a complete and efficient engineering facility servicing installations involving critical production areas.

Service Manager c £15,000 + incentives 2 Litre Car

Your task will be to further develop and implement a Service Organisation on a system basis, to support users where down time is critical.

Able to demonstrate a solid technical career encompassing both hardware and software experience, you will lead from the front a competent engineering staff.

Experience in graphic/CAD facilities would be advantageous, but more critical is your ability to implement effective Management controls and apply technical and motivational leadership to your staff.

Providing support services from centre, phone support will play a major part, though you should be prepared to take on site visits personally if required.

To apply, candidates should possess a minimum education standard of HND (preferably a Degree) and be able to demonstrate a career to date that proves technical competence and the ability to assimilate new skills. By contributing to the growth of the Company, you can be assured of personal benefit and excellent career opportunities. Full induction and product training, together with generous incentives and benefits, including pension, private health plan and full expenses, indicate the environment. Full relocation assistance is available where necessary.

Candidates should contact the Advertising Consultant, Brian Harris, on 021 236 3781 (24 hour answering service) or send current resumes to the Birmingham address shown below as soon as possible.

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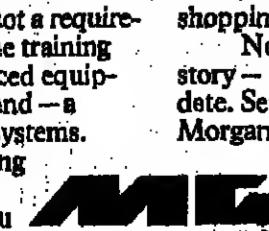
THE PROGRAMMING STORY BEHIND THE FRONT PAGE NEWS

The news is all from Morgan-Gramian plc, a major publishing house responsible for 50 important titles, many of them required reading for people concerned with the advances of high technology in business and industry.

With the installation of a large new IBM system 38 configuration at our Head Office in Woolwich by leased line to an IBM 3083 connected at Croydon, we're now ready to take on the exceptionally bright, people-orientated programmers who will write the synopses for our future growth - in RPG and COBOL - and do much more besides. There will be opportunities for writing systems using micros, minicomputers and mainframe in a multi-site environment.

IBM 38 experience is not a requirement - we can provide all the training you'll need to use our advanced equipment to develop - then expand - a complete range of software systems. Everything to support exciting developments.

What we want from you



Information Processing People

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£14,500 + BUPA + Car

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Salary Range £8,500 - £11,550 p.a. + Benefits Beds

Our Group, with an unrivalled reputation for excellence across a diverse range of high-tech products has successfully established its Central Support Group for the European Sales operation.

Now, due to promotion, we are able to offer a position of PROGRAMMER/ANALYST to provide a full range of services to our plants throughout Western Europe. Based in our prestigious complex in Bedfordshire, you will travel when required, to assist both users and sales staff on the effective use and development of systems.

The person we seek should have experience of COBOL in a mainframe environment, but also have had exposure to the personal computing sector, as this is a growing facility within the Group.

Your brief will be to provide effective programming and analytical support in identifying opportunities to improve sales effectiveness through computerised aids, training on current systems, improved sales systems, training of sales staff on software available within personal computing. The ability to produce systems and programming specifications, together with the task of ensuring that these will enhance the effectiveness of sales staff, will be the main objective.

Personal attributes required are a business orientated personality with the self-discipline to plan your own activity and the ability to interface at all levels, both in a user and training situation.

This is a career opportunity coupled with an attractive range of benefits, including profit sharing, private health plan and full relocation where necessary.

Candidates wishing to seize this opportunity should contact our Advising Consultant, Brian Harris on 021 236 3781 (24 hour answering service) or send a Résumé to the Birmingham address shown below at the earliest opportunity.

- * International Projects

- * Career Position

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ICL's philosophy demands support activities of the highest calibre to complement the excellence of the new systems products.

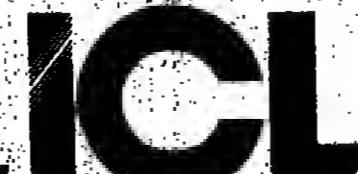
Our support team already has highly skilled professionals with extensive experience in the IBM mainframe/compatible market. Present sales activity and accelerated future plans demand that we find another, equally experienced man or woman to join this team.

If our new London based team member is to be

you, you'll need a thorough knowledge of VM and MVS, but equally important will be your well developed communications skills that ensure your success in working closely with our customers on all aspects of software development and support. With a background such as that, you could even expect to find yourself helping out on customer presentations at the pre-sale stage.

If your experience is right, why not use it to get involved with ATLAS 10 - and with everything that ICL is doing in the IBM compatible market.

Ring for an application form or send your c.v. to Barbara Fowler on 01-788 7272, Ext 2133: ICL House, Putney, London SW15 1SW.



We should be talking to each other.

UK Data Centre Manager

£14,000 plus Car

We are responsible for providing the technical facilities and services behind a highly-sophisticated, integrated MIS project. The systems currently being developed in the UK, will form the basis of business management in several significant areas of Northern Europe.

Crucial to the successful management of this long-term project is the appointment of our UK Data Centre Manager. The high visibility of this role demands that you have practical experience of the following:

- * Network Planning and Management.
- * IBM DOS Communications Products.
- * Database Products.
- * Software Productivity Tools.

You will be providing a vital technical link between systems development and the existing operations team where your advice and guidance will be sought on aspects of existing and future computing to include 4th Generation techniques.

The benefits of the position in addition to a competitive salary include a Company car, free private health insurance plus the usual benefits associated with a large multi-national organisation.

Application should be made by submitting a detailed Curriculum Vitae to Nick Reid, Advising Consultant at the London Office address below. All applications will be treated in the strictest of confidence and should be marked: Reference NOA/1.

(6504)

LONDON

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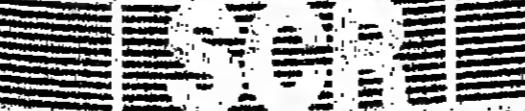
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Systems Programming

Salary c.£11500

Staffs/Derbyshire Border

You will need to be already employed in a systems programming environment and will be required to demonstrate previous experience, together with a sound understanding of either MVS or CICS. As VTAM features in our future plans, a knowledge of this would obviously be advantageous.

The comprehensive remuneration package includes pension, Life assurance cover, 24 days annual leave and full relocation where appropriate.

If you can relate to this challenging opportunity, contact Jim Mitchell on 021-236 3781 (24 hour answering service) or at home on 021-427 2291 (evenings and weekends until 9.00 p.m.).

You are assured of a prompt and confidential interview.

Jim Mitchell

(6496)

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Rapid Recall and Rapid Terminals are recognised as the leading U.K. distributors of Microcomputer components, boards, systems and peripherals. With offices based in High Wycombe and Nantwich our sales are exceeding £20 million per annum. Our success is based on offering our customers the best technical sales support in the Industry, and we're now looking for a number of exceptional Sales people to join our informal team.

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Internal Sales is a major stepping stone for career advancement into Field Sales or Marketing. Responsibilities include customer visits and telephone interface, preparing quotations and supporting our Field Sales Engineers. Sales experience is not totally necessary and hence makes this an attractive opening for junior design engineers wishing to enter into sales.

Field Sales Engineers - Rapid Recall

Our dramatic growth has meant that new sales areas have been created into the North and South of England. Responsibilities include the sale of DEC, Intel and H.P. products and knowledge of any of these product or sales experience is desirable.

Digital Sales Specialist - Rapid Recall

A totally new position for a person currently selling to software houses and small OEMs. A knowledge of Digital's micro computer range would be preferable although not essential.

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Our recent appointment as the exclusive U.K. distributor for Intel Commercial Systems has created a sales position for taking these products both into the OEM and end user market. The ideal applicant will have an appreciation of commercial systems and the IBM product.

Rapid Recall
Rapid House, Denmark Street,
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If you feel that you might enjoy
working in our team, why not ring
0494 26271
and speak to Karen Cahill.

Rapid Terminals

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SYSTEMS MANAGER £13,000 to £15,000**ANALYST/PROGRAMMER** £9,500 to £12,000

Combined Actuarial Performance Services provides investment performance measurement and statistical information to pension funds, and is backed by the three largest U.K. firms of Consulting Actuaries. Its administrative operation is based in Leeds and includes a new IBM 4300 computer installation, running under VMS/CMS.

There are currently two vacancies:
(a) Systems Manager — responsible for the design and development of new systems, programmes and the existing system, and ultimately for all computing aspects of the organisation. The applicants should be of numerate graduate level and should have a minimum of three years' relevant experience.
(b) Analyst/Programmer — responsible to the Systems Manager for implementation of new systems and programs. A minimum of two years' relevant experience is required and some Fortran exposure would be valuable.

Please write for full details to:
David P. Hager, Esq.,
Combined Actuarial Performance Services,
17 Albion Street,
Leeds, LS1 5CS.

COMPUTER PROGRAMMER

Thorntons, the well known quality confectionery manufacturer, are looking for an experienced programmer. Candidates (male or female) should have considerable programming experience using COBOL, and familiarity with Hewlett Packard 3000 hardware would be an advantage.

We offer an attractive salary, excellent working conditions and a full range of facilities.

Please telephone or write for an application form to Executive Manager-Personnel, J. W. Thornton Limited, Derwent Street, Belper, Derbyshire DE2 1WP. Tel: Belper (077 322 4181).

Thorntons
EFFECTIA GRAVIS, Computer Personnel Consultants, National House, 66 Wardour Street, London W1V 3HP

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JNR CONSULTANT HP 3000

to £12,000

Due to expansion a company based in the West End seeks a Junior Consultant. Applicants should currently be in an Analyst or Analyst/Prog role with the desire to become more involved in Analysis. Experience of HP equipment would be useful but not essential. As there will be a good deal of client contact applicants must be professional in both appearance and attitude.

PROGRAMMERS PASCAL/COBOL

to £9,000

Opportunity to join a progressive company in the West End who have just committed a large sum of money to continued development of their computer systems. Applicants should have a minimum of one year's PASCAL or COBOL and will have the opportunity to learn and work in both languages. Good prospects and conditions in this friendly but professional team.

ANALYST/PROG HONEYWELL

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A large South West London based manufacturing company are seeking an Analyst/Prog with good COBOL exp. A number of micros have also been installed so exp. with BASIC would be useful. You will be working in a small dept. which runs a multi-application on-line system that will be gradually increased to include a purchase order system. An opportunity for someone to become involved.

PROGRAMMERS PL1

to £11,500

A company offering a range of financial services has several requirements for PL1 programmers. The minimum requirement is for 18 months' PL1 in a commercial environment for the programming positions and up to four years' plus for the senior posts. Applicants should have good skills in round programming skills to include design, coding and implementation. Due to the size of the client there is a recognised career path which would lead through to systems if desired.

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A C. London site and a W. London based site require COBOL Programmers with a minimum of one year's exp. Both are commercial sites and will offer quick progression for a bright person, possible move to analysis. The successful candidate will work on various applications with a good deal of development. Good benefits.

ANALYST/PROGRAMMERS RPGII/RPGIII

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We have many clients, all of whom are SYS34 or SYS38 users, who have current positions for programmers and analysts. Applicants should have a minimum of six months' RPG from a commercial background through to three years' + for the more senior positions (any MAAPICS would be of special interest). The companies range from Banking through to Manufacturing and offer a wide range of benefits.

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We have numerous Clients in London and the Home Counties who urgently require experienced HP personnel ranging from Progs. Analyst/Progs. through to Project Leaders. The minimum requirement is nine months' HP COBOL or BASIC for the junior positions, with proven analysis and supervisory skills for the senior levels. The companies range from small software houses to large in-house installations and offer a wide variety of projects and perks.

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We have been retained by three London-based companies to recruit Analysts with varying levels of experience. A sound D.P. background is required with preference given to candidates with general accounting application exposure. All positions involve extensive work on new projects and offer good career prospects. Perks are varied and include large company benefits and discounts and relocation expenses where necessary.

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Thomas Cook Financial Services Ltd., a wholly owned subsidiary of Midland Bank plc, needs an experienced DG technical support programmer to join a small team involved with the development and support of a network of worldwide computer systems.

The job involves some programming in Business Basic, control of application software, maintenance of software and site documentation and participation in research and development activities. Future R & D work includes the evaluation of the DG desktop range of computers and the Xodac and Intos software products for which relevant expertise would be of particular interest.

Applicants for this post must have extensive Data General experience at a technical level and in particular a thorough knowledge of Business Basic under RDOS, AOS and AOS/V on Nova, Eclipse and MV series hardware.

You must be prepared to travel to support overseas sites as necessary and work some unsocial hours. In return, we offer a salary in the range of £10,000-£14,000 per annum, depending upon skills and experience; concessionary travel, low interest loans and relocation assistance if appropriate, to Peterborough.

Written applications giving full career details should be sent to Miss V. Wood, Personnel Manager, Thomas Cook Financial Services Ltd., PO Box 36, Thorpe Wood, Peterborough PE3 8SB.

Thomas Cook

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JOB FOR CONTRACT STAFF

As the economy picks up, so do the job prospects for contract staff at home and abroad . . . John Charlton reports

HAPPY days are definitely here again for contract staff, with many agencies reporting bumper bookings, though this applies in the main to those with a number of years' experience, particularly in online programming. But for batch programmers the market is diminishing as most firms are now able to meet their needs for these staff internally.

The upward trend in the UK economy has contributed most to this year's growth in the number of contract jobs now available. Demand is higher in the South-east, but there is also plenty of work to be found North of the Watford Gap.

Skilled staff can also broaden their horizons with a stint abroad and agencies report attractive vacancies in Western Europe and the US, on both the East and West Coasts.

Any agency worth its salt will match the applicant's experience to the potential employer's requirements, and will test would-be contractors' skills. For overseas jobs, agencies will also look after contractors' visa and work permit requirements.

Stuart Pope, a marketing executive with Guildford-based computer staff recruitment specialist Strand Computer Recruitment, confirms that life for contractors is getting rosier. "As the country cheers up everything cheers up, and 1984 is looking good for contractors. Employers are after programmers and analyst programmers with solid online skills. But there is not much demand for the average Cobol batch pro-

grammer.

"We have a number of contracts for those with IBM System 38 experience in RPG III, and particu-

larly in file handling for this mini-

"As the machine has only been out a relatively short time there are not many people around with System 38 skills, and those who

have worked with System 34 are having difficulty moving up to the 38."

Strand Computer Recruitment has more than 80 contract vacancies in its books, but Pope comments: "It's a very fast market and the number of vacancies we have at any given time can vary dramatically."

Strand also has some ICL contracts to fill. As with IBM, the call is for online programmers in IDMS and TPMS (teleprocessing management system). Work is available, too, for System 25 Assembler programmers for the ME29 minicomputer.

D/L/I experience."

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ments: "It's a very fast market and the number of vacancies we have at any given time can vary dramati-

cally."

In the US Knight has contracts paying upwards of \$800 a week.

Hayton says: "In the US we have a particular need for staff with Unix and 'C' (the Unix applications language) experience. On the West Coast we have a number of contracts for those with IMS and database skills".

"But for any programmers with online skills 1984 will be a good year".

John Charlton is deputy editor of Computer Talk.

Horizons widen for skilled contractors



For those prepared to fly off to Australia, good contracts await qualified staff.

Contracts for programmers vary from £300 to £350 a week for the more common skills to £450 for good solid skills and experience.

For people who fancy a move to the Antipodes Strand has good contracts in Australia and New Zealand.

The lure of working abroad is one of the attractions of contracting, and languages — of the human variety — need not be a problem. Apart from the English-speaking countries, English is spoken widely in the Netherlands and Belgium.

Dave Hayton handles contract staff at the Knight agency in Manchester. This bureau covers the whole of the UK as well as specialising in contracts in Western Europe and the US.

Knight currently has contract vacancies in Holland, Belgium, Germany and the US.

In Holland and Belgium there are jobs for those who have worked on DEC, IBM and ICL equipment. These are for online or data-base skills.

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Anyone wanting to work in the US must have a visa and the so-called green card (a work permit).

Hayton says there are plenty of contracts throughout the UK, too. Again these tend to be for programmers and analysts/programmers with online and specialist skills.

Knight has a number of contracts demanding DEC Vax and PDP systems programming skills, as well as database and teleprocessing experience (IDMS and TPMS) on ICL equipment. Hayton says: "Cobol programmers are in demand, and not only for defence work. There are jobs to offer for Cobol programmers who have used the language on DEC Vax and PDP micros, as well as Ferranti and GEC machines".

According to Hayton the current rate for Knight contracts varies from £375 to £700 or £800 for the top jobs. He says demand for contract staff is "quite strong in the North-west and Scotland, and the South will always have a high demand".

It is not only actual computer experience that matters in getting good contract pay, but also the type of business in which the contractor has learnt his skills. For those who have been with the banks pay is that much higher.

Nick Poland, consulting manager with Croydon computer staff agency TLP, says: "You have to be a specialist to do well in contracting and we find that good computer experience allied to a banking background can bring in most money. We have jobs with banks paying up to £800 a week, and for these one would need at least four years' experience of online and database programming.

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"But for any programmers with online skills 1984 will be a good year".

John Charlton is deputy editor of Computer Talk.

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COBOL, UNIVAC 1100, JSP	All levels	Kent
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DB, AOS, COBOL	Programmer	London
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This position has arisen due to the increasing demands on the time of the Project Development Manager and the person selected will deputise for him in his absence. Candidates should have about 7 years' strong IBM experience and have been responsible for at least one major project. A good commercial background is essential and knowledge of library systems would be an advantage. Exposure to IDMS and Shadow II would be an asset.

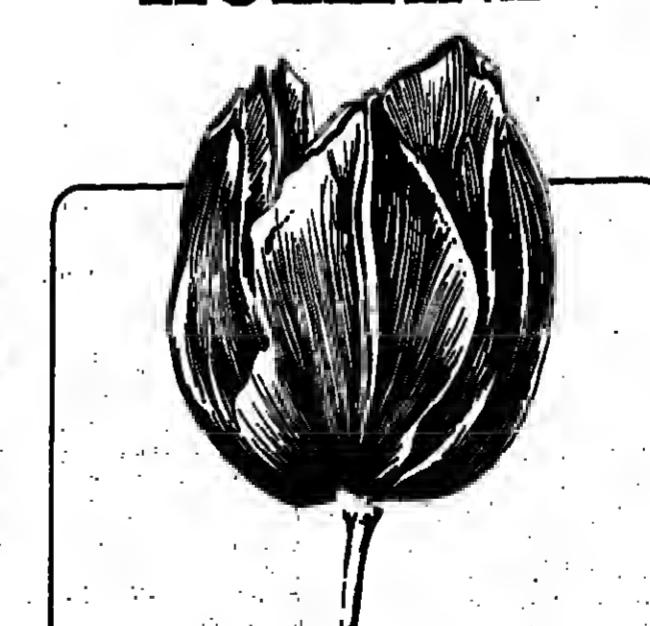
IBM and DEC Installation

The organisation utilises large IBM hardware and multiple DEC computers and several on-line database systems are operational. In addition, a network with distributed databases at its offices in North and South America and Europe is being set up. COBOL is the main programming language.

Working Environment

The development team comprises a number of experienced analyst-programmers who work individually on projects or combine into small project teams as the need arises. A high proportion of the staff is British and English is the working language of the installation.

HOLLAND



Analyst/Programmer Library Systems £11—£17,000

This opening offers the opportunity to become involved in important development work with strong emphasis on analysis. The ideal candidate should have between 3 and 5 years' analysis and programming experience, preferably in a DEC environment, although IBM would be acceptable. A good knowledge of COBOL is required together with a strong technical background. Experience of library systems is essential.

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Interviews

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For an initial discussion, ring me, Alison Jary, on (0270) 627206 office hours or (0270) 626136 other times, or write to me at the address opposite.

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Interviews will be held at our Regional Offices, where appropriate.

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MMT COMPUTING plc
New Gallery House
6 Vig Street, London, W1

(8503)

Xitan is the foremost UK distributor of professional Microcomputer Software to the trade. Due to continuing rapid expansion we now have a vacancy within our support department.

TECHNICAL SUPPORT

You will be responsible for providing technical support and trouble shooting backup to the wide range of software that we distribute for CP/M, CP/M-86, PC-DOS, MS-DOS and other related operating systems.

This position provides an excellent opportunity for expanding your knowledge in the area of the latest developments in the fast-moving software industry.

Candidates will preferably be graduates in computer science or related subjects; however, relevant experience and the ability to work logically on a customer orientated outlook is equally important.

As part of the Comart Group of Companies the above vacancy has a range of benefits including pensions scheme, company share scheme, sickness benefit and 20 days' holiday p.a.

Application form from:

XITAN LIMITED
Xitan House
27 Belgrave Road, Totton
Southampton SO4 3HX
Telephone: (0703) 871211

(8503)

MAJOR U.S. FLOPPY DISK MANUFACTURER

is opening its European Technical Support Office in Brussels and has an immediate opportunity for a

EUROPEAN TECHNICAL SUPPORT MANAGER

The candidate will have five-ten years of field engineering/customer support experience with an electrical engineering/computer science degree. Working throughout Europe and the U.K. with travel to Cellonix, the candidate will provide pre and post sales technical support to Europe's major microcomputer OEMs, system integrators and distributors, diagnosis field problems and trouble shoot.

The company is one of the new generation floppy manufacturers offering excellent growth opportunities to build a European support organisation.

French and German language capability useful, as well as knowledge of microcomputer operating systems and peripheral interfaces.

Please send your c.v. in confidence to:

Mr. Peter Hensley
Consultech International Corp.
Boulevard de Waterloo, 5210 Bruxelles
B-1000 Brussels, Belgium

(8503)

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DATA PROCESSING MANAGER

HERTS

£12,000+

This highly successful manufacturing company now seeks an exceptional person to fill their vacant DPM position. Management and excellent communication skills are paramount together with fluency in RPGII and sound knowledge of IBM hardware. Systems 34 and 38. This is a relatively small department where scope for creativity and initiative exist in abundance. An understanding of MAPICS although not imperative would prove useful. Full relocation package available.

REF: 6383/H

ANALYST/PROGRAMMER

HERTS

£12,000

A leading insurance company now seeks a total of three analyst programmers to strengthen their thriving DP department. Successful candidates will be educated to degree level and have a minimum of two years' experience in structured programming techniques and transaction processing. Initial projects will entail involvement in analysis, redesign and enhancement of present in-house systems. Fluency in FORTRAN is imperative so too the ability to work as part of a young dynamic team.

REF: 8495/H

SENIOR ANALYST, PROGRAMMER

NORTH LONDON

TO £11,000

Our client, a leading motor manufacturer require a programmer and senior analyst who are conversant with IBM hardware and who have attained a high level of fluency in PL/I. Sound academic background together with experience of a manufacturing environment are desirable. Both positions involve excellent possibilities for self-development and career progression. Highly attractive relocation package available.

Ring Haydn Parry at KPG or 01-747 0969 (evenings/weekends)

REF: 8499/H

SENIOR ANALYST PROGRAMMER

NORTH LONDON

TO £12,500

A major I.M.C.G. manufacturing company in West London is currently looking to recruit an additional experienced HP3000 Analyst/Programmer. You should have at least three years' Cobol experience under Imagi, View and Query and have the ability to work independently on systems design. You will be expected to lead a small team on major project developments - and should have had previous experience working from conception to implementation. REF: 9400/MJ

SENIOR ANALYST/PROGRAMMER

WEST LONDON

£14,500 + BENS

Leading a small team, you will be responsible for business-related applications from investigation through to implementation. You will be expected to participate in the formulation of technical policy concerning systems development and enhancement. With at least two years as a Team Leader with a sound background in programming and analysis (preferably Cobol and Fortran) - you will be looking to further your career in an on-line financial systems environment.

REF: 9501/MJ

MVS/XA, SNA, SAS SYSTEMS PROGRAMMERS

CITY

CITY TO £15,000

JUNIOR PROGRAMMER/PROGRAMMER

CITY

£7.5-£10K + BONUS

Minimum one year's experience Wang/Cobol for international insurance company. Excellent career prospects within a young, progressive, development environment.

REF: 402/DF

PROGRAMMER

BIRMINGHAM

£8,500

Cobol/Commercial background. Some analytical experience useful. Experience on UNIVAC/IBM/HP or DEC is required to join this small DP site within a major manufacturing company.

REF: 484/D

PROG./ANALYST PROGRAMMERS

WARKS

£10.5K + BONUS + BENEFITS

Two to three years' experience on Sperry 3400/1168, Mapper using Cobol or RPG. Late twos, early threes. You will be working in a small team helping with rawines for a large on-line system linking up this manufacturing group.

REF: 489/D

CENTRAL LONDON

CITY

Young company, expanding rapidly to meet business demands, seek additional IBM CICS or ICL TPMS-COBOL personnel to work on payroll and personnel applications. Excellent prospects for career development.

REF: 15K + CAR

TECHNICAL CONSULTANT

CITY

Prog. background, accounts experience useful. Q.A. role to assist both customer and support the user.

REF: 15K

SUPPORT CONSULTANT

CITY

Payroll opp. - 95% (UNIPAY ADV.) Computing techniques 5%. To answer all client queries. Excellent training given.

REF: 490/DF

SENIOR PROGRAMMER

CITY

To work on financial application doing conversions in the Special Packages.

Contact Diana Fabregas at KPG or on 01-788 0714 (evenings or weekends).

PUBLIC SECTOR APPOINTMENTS

STAFFORDSHIRE COUNTY COUNCIL

Principal Systems Programmer up to £11,052
Senior Systems Programmer up to £10,539
Senior Programmers up to £10,539
Senior Systems Analysts up to £10,539

The County Council computer installation is based on two IBM 4341 mainframes with 3,270 disks (over 500MB) and 3420 tapes running under VM/370 and DOS/VSE serving all departments of the Authority and four District Councils. There are over 180 local and remote terminals installed and more will be installed during 1984/85. The main programming languages PL/I with DLT and CICS, APL with ADL and ADRS1 and EASYtrieve are also in use.

Applicants for the Systems Programmer posts should ideally have several years' experience in one or more of the software products mentioned. Senior Programmers will require knowledge of PL/I preferable with DLT and CICS and knowledge of Assembler will also be an advantage. The Systems Analysts posts a record of successful system design and implementation preferably of terminal-based systems will be the prime qualification, although an experienced applications programmer wishing to move to systems analysis would be considered.

Training as appropriate will be given to successful applicants for the above posts and salary within the scales being offered are negotiable according to experience. In appropriate cases the County Council will consider the granting of financial assistance towards removal and lodging expenses.

There are no application forms and written applications, which should include full details of the applicant's computing and employment experience, should be sent to the County Treasurer, P.O. Box 10, County Buildings, Eastgate Street, Stafford ST12 2NF by March 30, 1984. Telephone enquiries may be made to Stafford (0785) 3121 - Mr. J. T. Tucker, extension 8305 or Mr. M. A. Holt, extension 8480. All applicants are asked to note that it is the County Council's view that it is desirable for their employees to be members of an appropriate trade union.

(0845)

Teesside Polytechnic

ONE YEAR FULL-TIME Conversion Course

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

Departments of Computer Science and Electrical, Instrumentation and Control Engineering. The SERC is prepared to offer suitable candidates a limited number of research studentships.

For details and application forms contact:
 Departmental Administrator
 Department of Computer Science
 Teesside Polytechnic
 Borough Road, Middlesbrough
 Cleveland TS1 3BA
 Tel: (0642) 218121 extn. 4270

(0642)

EAST ANGLIAN REGIONAL HEALTH AUTHORITY

Experienced Systems Designers/Programmers

required to join a development section of over 30 staff providing computer systems in patient administration, child health, finance, etc., for health authorities in East Anglia. Equipment includes district based CBT and Datapoint computers for patient administration and finance respectively, as well as a large central ICL 2986.

Candidates should preferably be educated to degree level and experience in COBOL would be an advantage.

Salary scale: £7,404-£9,025 per annum.

Candidates with less than two years' experience will be considered but at a lower starting salary.

Application form and job description from the Regional Personnel Officer, Union Lane, Cambridge CB4 1RF. Tel: (0223) 61212 ext. 325. Closing date: April 6, 1984.

(0844)

THE UNITED MEDICAL AND DENTAL SCHOOLS OF GUY'S AND ST THOMAS'S HOSPITALS

PROGRAMMER/STATISTICIAN

required to work in the Unit for Metabolic Medicine and Community Medicine Department at Guy's Hospital, in the planning, implementation and analytical stages of a project concerned with the prevention and treatment of early kidney disease in large populations. General statistical help would also be required in the work of the Unit.

Epidemiological/clinical trial interests or experience would be valuable. Salary in range £10,810-£14,425 plus London Allowance. Initial appointment would be for two years.

Applications should be made, by writing, including curriculum vitae and names and addresses of three referees, to the Deputy Secretary, United Medical and Dental Schools, Guy's Hospital Medical School, London Bridge, London SE1 1RT, quoting ref. 1941.

(0844)

The GLC Central Computer Service is one of the most advanced computer installations in the country. An IBM 3033 computer system runs a large teleprocessing network, running over a variety of leased lines using BSC and SDLC protocols in 3705 and 3270 serial units with a large number of micros and 3270 type terminals using VTAM/CICS/ATMS/STAR/ADABAS and VS/P applications.

This post will be mainly concerned with the installation of new equipment, both at central site and remote locations.

Responsibilities will also include day-to-day control of the network, including fault tracing.

A sound knowledge of teleprocessing equipment and proven communication skills are essential. This post is suitable for job sharing.

Salary: £9,000-£12,993 inclusive.

For application form, to be returned by 6th April 1984, write to: Central Computer Services, Greater London Council, Room 63, The County Hall, SE1 7PB or telephone 01-703 0000 ext. 2200.

The GLC welcomes applications from all sections of the community, irrespective of sex, race, ethnic origin, colour, sexual orientation or disability. If they have the necessary attributes to do the job.

(0800)

The GLC is an equal opportunities employer.

The GLC is an equal opportunities